

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

To: R. LEWIS GABLE  
COWAN, LIEBOWITZ & LATMAN, P.C.  
1133 AVENUE OF THE AMERICAS  
NEW YORK, NY 10036-0799

RECEIVED

NOV 17 1998

Cowan, Liebowitz & Latman, P.C.

## PCT

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT  
OR THE DECLARATION

(PCT Rule 44.1)

### DOCKETED

Date of Mailing  
(day/month/year)

10 NOV 1998

Applicant's or agent's file reference  
21927.03

FOR FURTHER ACTION See paragraphs 1 and 4 below

International application No.  
PCT/US98/14886

International filing date  
(day/month/year)  
18 JULY 1998

Applicant  
NET EXCHANGE, INC.

## Best Available Copy

1. ☒ The applicant is hereby notified that the international search report has been established and is transmitted herewith.  
**Filing of amendments and statement under Article 19:**  
 The applicant is entitled, if he so wishes, to amend the claims of the international application (see Rule 46):  

When? The time limit for filing such amendments is normally 2 months from the date of transmittal of the international search report; however, for more details, see the notes on the accompanying sheet.

Where? Directly to the International Bureau of WIPO  
 34, chemin des Colombettes  
 1211 Geneva 20, Switzerland  
 Facsimile No.: (41-22) 740.14.35

For more detailed instructions, see the notes on the accompanying sheet.
2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect is transmitted herewith.
3. ☐ With regard to the protest against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:
 

☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.  
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.
4. **Further action(s):** The applicant is reminded of the following:
 

Shortly after 18 months from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in rules 90 bis 1 and 90 bis 3, respectively, before the completion of the technical preparations for international publication.

Within 19 months from the priority date, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until 30 months from the priority date (in some Offices even later).

Within 20 months from the priority date, the applicant must perform the prescribed acts for entry into the national phase before all designated Offices which have not been elected in the demand or in a later election within 19 months from the priority date or could not be elected because they are not bound by Chapter II.

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

LE HIEN LUU

Telephone No. (703) 305-9650

# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 21927.03	FOR FURTHER ACTION      see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/US98/14886	International filing date ( <i>day/month/year</i> ) 18 JULY 1998	(Earliest) Priority Date ( <i>day/month/year</i> ) 18 JULY 1997
Applicant NET EXCHANGE, INC.		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. ☐ Certain claims were found unsearchable (See Box I).
  
2. ☐ Unity of invention is lacking (See Box II).
  
3. ☐ The international application contains disclosure of a nucleotide and/or amino acid sequence listing and the international search was carried out on the basis of the sequence listing
 

☐ filed with the international application.  
☐ furnished by the applicant separately from the international application,  

☐ but not accompanied by a statement to the effect that it did not include matter going beyond the disclosure in the international application as filed.

☐ transcribed by this Authority.
  
4. With regard to the title,
 

☒ the text is approved as submitted by the applicant.  
☐ the text has been established by this Authority to read as follows:
  
5. With regard to the abstract,
 

☐ the text is approved as submitted by the applicant.  
☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
  
6. The figure of the drawings to be published with the abstract is:  
 Figure No. 1

☒ as suggested by the applicant.  
☐ because the applicant failed to suggest a figure.  
☐ because this figure better characterizes the invention.

☐ None of the figures.

Box III TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)

## NEW ABSTRACT

Techniques to make e-mail correspondent-centric rather than message-centric (985-999), and reduce junk e-mail (1001-1091). Tabulates (985-999), maintains (985-999), and updates (115(a), 115(b), ... , 115(n), 215) useful information about the user's chosen correspondents, and the history and status of each correspondence series. Filters incoming messages from an unrecognized sender (1013-1031, 1061-1075), asking user (1019) whether to add sender to correspondent list, and if so prompts user (1023) for needed information. Eliminates the need to search for e-mail addresses. Facilitates viewing sequential messages to and from a correspondent. Provides an effective tool to eliminate junk-mail (1013-1031, 1061-1075) by making it simpler and more practical to screen messages or change one's e-mail address. When user (121(a), 121(b), 121(c)) changes his e-mail address, automates notification of user's chosen correspondents, and in some cases can automatically update such correspondents, e-mail address lists. Eliminates need to manually create and maintain mailboxes or folders (985-999). Allows automated organization of e-mail by correspondent (701-711, 215). Is easier to learn and use than previous forms of e-mail.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/14886

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G06F 13/00

US CL : 395/200.36, 673

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 395/200.36, 673

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y  Y	US 5,548,789 A (NAKANURA) 20 AUGUST 1996, COL. 4, LINES 9-22, COL. 7, LINE 42 - COL. 8, LINE 5.  US 5,377,354 A (SCANNELL ET AL) 27 DECEMBER 1994, COL. 3, LINE 33 - COL 4, LINE 38, COL. 5, LINE 15; - COL. 7, LINE 27.	1 — 2-5  2-5



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents	*T*	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X*	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
*E* earlier document published on or after the international filing date	*Y*	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*Z*	document member of the same patent family
*O* document referring to an oral disclosure, use, exhibition or other means		
*P* document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

07 OCTOBER 1998

Date of mailing of the international search report

10 NOV 1998

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

LE HIEN LUU

Telephone No. (703) 305-9650

## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under Article 19. The Notes are based on the requirements of the Patent Cooperation Treaty and of the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule" and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the letter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

**What parts of the international application may be amended?**

The claims only.

The description and the drawings may only be amended during international preliminary examination under Chapter II.

**When?** Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

**Where not to file the amendments?**

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

**How?** Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

**What documents must/may accompany the amendments?**

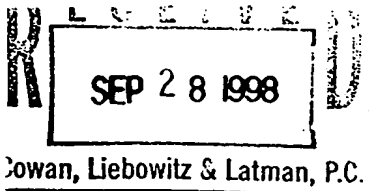
Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confounded with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.



## PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

GABLE, R., Lewis  
Cowan, Liebowitz & Latman, P.C.  
1133 Avenue of the Americas  
New York, NY 10036-6799  
ETATS-UNIS D'AMERIQUE

Date of mailing (day/month/year) 18 September 1998 (18.09.98)	
Applicant's or agent's file reference 21927.03	IMPORTANT NOTIFICATION
International application No. PCT/US98/14886	International filing date (day/month/year) 18 July 1998 (18.07.98)
International publication date (day/month/year) Not yet published	Priority date (day/month/year) 18 July 1997 (18.07.97)
Applicant NET EXCHANGE, INC. et al	

1. The applicant is hereby notified of the date of receipt (except where the letters "NR" appear in the right-hand column) by the International Bureau of the priority document(s) relating to the earlier application(s) indicated below. Unless otherwise indicated by an asterisk appearing next to a date of receipt, or by the letters "NR", in the right-hand column, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
2. This updates and replaces any previously issued notification concerning submission or transmittal of priority documents.
3. An asterisk(\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b). In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
4. The letters "NR" appearing in the right-hand column denote a priority document which was not received by the International Bureau or which the applicant did not request the receiving Office to prepare and transmit to the International Bureau, as provided by Rule 17.1(a) or (b), respectively. In such a case, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

<u>Priority date</u>	<u>Priority application No.</u>	<u>Country or regional Office or PCT receiving Office</u>	<u>Date of receipt of priority document</u>
18 July 1997 (18.07.97)	60/053,070	US	10 Augu 1998 (10.08.98)

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

C. Carrié

Telephone No. (41-22) 338.83.38

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ US

EL244521898US

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:  
The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty.

For International Preliminary Examining Authority use only		
Identification of IPEA		Date of receipt of DEMAND
<b>Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION</b>		Applicant's or agent's file reference 438701/003
International application No. PCT/US98/14886	International filing date (day/month/year) July 18, 1998	(Earliest) Priority date (day/month/year) July 18, 1997
Title of invention APPARATUS AND METHOD FOR EFFECTING CORRESPONDENT-CENTRIC ELECTRONIC MAIL		
<b>Box No. II APPLICANT(S)</b>		
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  NET EXCHANGE, INC. 11 Broadway, Suite 521 New York, New York 10004 US		Telephone No.: (212) 785-1750
		Facsimile No.: (212) 785-1739
		Teleprinter No.:
State (i.e. country) of nationality: US		State (i.e. country) of residence: US
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  MILLER, Stephen S. 8 Gramercy Park South, Apt. 6K New York, New York 10003		
State (i.e. country) of nationality: US		State (i.e. country) of residence: US
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)  SHAALAN, Mohammed S. 800 Kearney Avenue Kearny, New Jersey 07032		
State (i.e. country) of nationality: Egypt		State (i.e. country) of residence: US
<input type="checkbox"/> Further applicants are indicated on a continuation sheet.		

Sheet No. 2

International application No.  
PCT/US98/14886

Continuation of Box No. II APPLICANT(S)

*If none of the following sub-boxes is used, this sheet is not to be included in the demand.*

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

ROSS, Lewis Edward  
814 Empire Avenue  
Far Rockaway, New York 11691State (i.e. country) of nationality:  
USState (i.e. country) of residence:  
US

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

☐ Further applicants are indicated on another continuation sheet.



## Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The following person is ☒ agent ☐ common representativeand ☐ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☒ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*ROSENTHAL, Lawrence; POKOTILOV, Steven B.; GITTEN,  
Howard M.; SIEGAL, Matthew W.  
STROOCK & STROOCK & LAVAN LLP  
180 Maiden Lane  
New York, New York 10038

Telephone No.:

(212) 806-5400

Facsimile No.:

(212) 806-6006

Teleprinter No.:

☐ Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Box No. IV STATEMENT CONCERNING AMENDMENTS

The applicant wishes the International Preliminary Examining Authority\*

(i) ☒ to start the international preliminary examination on the basis of the international application as originally filed.(ii) ☐ to take into account the amendments under Article 34 of☐ the description (amendments attached).☐ the claims (amendments attached).☐ the drawings (amendments attached).(iii) ☐ to take into account any amendments of the claims under Article 19 filed with the International Bureau (a copy is attached).(iv) ☐ to disregard any amendments of the claims made under Article 19 and to consider them as reversed.(v) ☐ to postpone the start of the international preliminary examination until the expiration of 20 months from the priority date unless that Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

\* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

## Box No. V ELECTION OF STATES

☒ The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)* except .....*(If the applicant does not wish to elect certain eligible States, the name(s) or country code(s) of those States must be indicated above.)*

Sheet No. 4

International application No.  
PCT/US98/14886

**Box No. VI CHECK LIST**

The demand is accompanied by the following documents for the purposes of international preliminary examination:

- |  |   |        |
|--|---|--------|
| 1. amendments under Article 34                     |   |        |
| description  | : | sheets |
| claims   | : | sheets |
| drawings   | : | sheets |
| 2. letter accompanying amendments under Article 34 | : | sheets |
| 3. copy of amendments under Article 19             | : | sheets |
| 4. copy of statement under Article 19              | : | sheets |
| 5. other (specify):                                | : | sheets |

For International Preliminary  
Examining Authority use only

received                      not received

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- |  |  |
|--|--|
| 1. <input checked="" type="checkbox"/> separate signed power of attorney | 4. <input checked="" type="checkbox"/> fee calculation sheet |
| 2. <input type="checkbox"/> copy of general power of attorney            | 5. <input type="checkbox"/> other (specify):                 |
| 3. <input type="checkbox"/> statement explaining lack of signature       |  |

**Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE**

*Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).*

  
Howard M. Gitten

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply. ☐ The applicant has been informed accordingly.

4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.

5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

For International Bureau use only

Demand received from IPEA on:

## PCT

## FEE CALCULATION SHEET

Annex to the Demand for international preliminary examination

<div style="border: 1px solid black; padding: 2px;"><b>International application No.</b>     PCT/US98/14886</div> <div style="border: 1px solid black; padding: 2px;"><b>Applicant's or agent's file reference</b>     438701/003</div>	<div style="border: 1px solid black; padding: 2px; text-align: center;">For International Preliminary Examining Authority use only</div> <div style="border: 1px solid black; height: 100px; margin-top: 10px;"></div>
<b>Applicant</b> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;">Net Exchange, Inc.</div>	
<b>Calculation of prescribed fees</b>	
1. Preliminary examination fee .....	490.00 <span style="border: 1px solid black; padding: 0 5px;">P</span>
2. Handling fee <i>(Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.)</i> .....	162.00 <span style="border: 1px solid black; padding: 0 5px;">H</span>
3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box .....	<div style="border: 1px solid black; padding: 5px; display: inline-block;">652.00</div> <div style="border: 1px solid black; padding: 5px; display: inline-block; margin-top: 5px;">TOTAL</div>
<b>Mode of Payment</b>	
<input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash
<input type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps
<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons
<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):
<b>Deposit Account Authorization</b> <i>(this mode of payment may not be available at all IPEAs)</i>	
The IPEA/ <u>US</u> <input checked="" type="checkbox"/> is hereby authorized to charge the total fees indicated above to my deposit account.	
<input checked="" type="checkbox"/> <i>(this check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.	
19-4709	16 February 1999
Deposit Account Number	Signature

## GENERAL POWER OF ATTORNEY

(for several international applications filed under the Patent Cooperation Treaty)

(PCT Rule 90.5)

The undersigned person(s) :

(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

Mr. Stephen S. Miller  
President, CEO  
NetExchange, Inc.  
11 Broadway - Suite 854  
New York, New York 10004

hereby appoint(s) the following person as:

☒ agent

☐ common representative

Name and address

(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

ROSENTHAL, Lawrence; POKOTILOW, Steven B.; GITTEN, Howard M.; SIEGAL, Matthew W.  
STROOCK & STROOCK & LAVAN LLP  
180 Maiden Lane  
New York, New York 10038

to represent the undersigned before

☒ all the competent International Authorities

☐ the International Searching Authority only

☐ the International Preliminary Examining Authority only

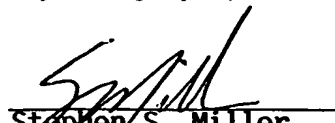
in connection with any and all international applications filed by the undersigned with the following Office

US

as receiving Office

and to make or receive payments on behalf of the undersigned.

Signature(s) (where there are several persons, each of them must sign; next to each signature, indicate the name of the person signing and the capacity in which the person signs, if such capacity is not obvious from reading this power).

  
Stephen S. Miller  
President, CEO

Date:

2/10/99

# PCT

## REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference  
(if desired) (12 characters maximum)

21927.03

### Box No. I TITLE OF INVENTION

APPARATUS AND METHOD FOR EFFECTING CORRESPONDENT-CENTRIC ELECTRONIC MAIL

### Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below.)

NET EXCHANGE, INC.  
11 Broadway, Suite 854  
New York, New York 10004  
United States of America

☐ This person is also inventor.

Telephone No.  
(212) 785-1750

Facsimile No.  
(212) 785-1739

Teleprinter No.

State (i.e. country) of nationality:  
US

State (i.e. country) of residence:  
US

This person is applicant for the purposes of: ☒ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

### Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below.)

MILLER, Stephen S.  
8 Gramercy Park South, Apt. 6K  
New York, NY 10003  
United States of America

This person is:

☐ applicant only

☐ applicant and inventor

☒ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:  
US

State (i.e. country) of residence:  
US

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

### Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

GABLE, R. Lewis  
COWAN, LIEBOWITZ & LATMAN, P.C.  
1133 Avenue of the Americas  
New York, New York 10036-6799  
United States of America

Telephone No.  
(212) 790-9228

Facsimile No.  
(212) 575-0671

Teleprinter No.

☐ Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

## Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS

If none of the following sub-boxes is used, this sheet is not to be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below.)

ROSS, Lewis Edward  
814 Empire Avenue  
Far Rockaway, New York 11691  
United States of America

This person is:

- ☐ applicant only  
☐ applicant and inventor  
☒ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:  
US

State (i.e. country) of residence:  
US

This person is applicant  
for the purposes of:

☐ all designated  
States

☐ all designated States except  
the United States of America

☐ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below.)

SHAALAN, Mohammed S.  
800 Kearney Avenue  
Kearny, New Jersey 07032  
United States of America

This person is:

- ☐ applicant only  
☐ applicant and inventor  
☒ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:  
Egypt

State (i.e. country) of residence:  
US

This person is applicant  
for the purposes of:

☐ all designated  
States

☐ all designated States except  
the United States of America

☐ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only  
☐ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant  
for the purposes of:

☐ all designated  
States

☐ all designated States except  
the United States of America

☐ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (i.e. country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only  
☐ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant  
for the purposes of:

☐ all designated  
States

☐ all designated States except  
the United States of America

☐ the United States  
of America only

☐ the States indicated in  
the Supplemental Box

**Box No.V DESIGNATION OF STATES**

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

**Regional Patent**

- ☒ AP ARIPO Patent: GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ EA Eurasian Patent: AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ EP European Patent: AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ OA OAPI Patent: BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line) .....

**National Patent (if other kind of protection or treatment desired, specify on dotted line):**

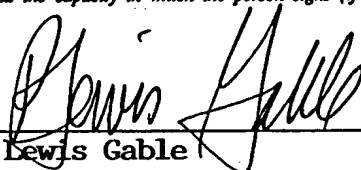
- |  |  |
|--|--|
| <input checked="" type="checkbox"/> AL Albania .....                               | <input checked="" type="checkbox"/> LT Lithuania .....                                 |
| <input checked="" type="checkbox"/> AM Armenia .....                               | <input checked="" type="checkbox"/> LU Luxembourg .....                                |
| <input checked="" type="checkbox"/> AT Austria .....                               | <input checked="" type="checkbox"/> LV Latvia .....                                    |
| <input checked="" type="checkbox"/> AU Australia .....                             | <input checked="" type="checkbox"/> MD Republic of Moldova .....                       |
| <input checked="" type="checkbox"/> AZ Azerbaijan .....                            | <input checked="" type="checkbox"/> MG Madagascar .....                                |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina .....                | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia ..... |
| <input checked="" type="checkbox"/> BB Barbados .....                              | <input checked="" type="checkbox"/> MN Mongolia .....                                  |
| <input checked="" type="checkbox"/> BG Bulgaria .....                              | <input checked="" type="checkbox"/> MW Malawi .....                                    |
| <input checked="" type="checkbox"/> BR Brazil .....                                | <input checked="" type="checkbox"/> MX Mexico .....                                    |
| <input checked="" type="checkbox"/> BY Belarus .....                               | <input checked="" type="checkbox"/> NO Norway .....                                    |
| <input checked="" type="checkbox"/> CA Canada .....                                | <input checked="" type="checkbox"/> NZ New Zealand .....                               |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein .....  | <input checked="" type="checkbox"/> PL Poland .....                                    |
| <input checked="" type="checkbox"/> CN China .....                                 | <input checked="" type="checkbox"/> PT Portugal .....                                  |
| <input checked="" type="checkbox"/> CU Cuba .....                                  | <input checked="" type="checkbox"/> RO Romania .....                                   |
| <input checked="" type="checkbox"/> CZ Czech Republic .....                        | <input checked="" type="checkbox"/> RU Russian Federation .....                        |
| <input checked="" type="checkbox"/> DE Germany .....                               | <input checked="" type="checkbox"/> SD Sudan .....                                     |
| <input checked="" type="checkbox"/> DK Denmark .....                               | <input checked="" type="checkbox"/> SE Sweden .....                                    |
| <input checked="" type="checkbox"/> EE Estonia .....                               | <input checked="" type="checkbox"/> SG Singapore .....                                 |
| <input checked="" type="checkbox"/> ES Spain .....                                 | <input checked="" type="checkbox"/> SI Slovenia .....                                  |
| <input checked="" type="checkbox"/> FI Finland .....                               | <input checked="" type="checkbox"/> SK Slovakia .....                                  |
| <input checked="" type="checkbox"/> GB United Kingdom .....                        | <input checked="" type="checkbox"/> SL Sierra Leone .....                              |
| <input checked="" type="checkbox"/> GE Georgia .....                               | <input checked="" type="checkbox"/> TJ Tajikistan .....                                |
| <input checked="" type="checkbox"/> GH Ghana .....                                 | <input checked="" type="checkbox"/> TM Turkmenistan .....                              |
| <input checked="" type="checkbox"/> GM Gambia .....                                | <input checked="" type="checkbox"/> TR Turkey .....                                    |
| <input checked="" type="checkbox"/> GW Guinea-Bissau .....                         | <input checked="" type="checkbox"/> TT Trinidad and Tobago .....                       |
| <input checked="" type="checkbox"/> HU Hungary .....                               | <input checked="" type="checkbox"/> UA Ukraine .....                                   |
| <input checked="" type="checkbox"/> ID Indonesia .....                             | <input checked="" type="checkbox"/> UG Uganda .....                                    |
| <input checked="" type="checkbox"/> IL Israel .....                                | <input checked="" type="checkbox"/> US United States of America .....                  |
| <input checked="" type="checkbox"/> IS Iceland .....                               | <input checked="" type="checkbox"/> UZ Uzbekistan .....                                |
| <input checked="" type="checkbox"/> JP Japan .....                                 | <input checked="" type="checkbox"/> VN Viet Nam .....                                  |
| <input checked="" type="checkbox"/> KE Kenya .....                                 | <input checked="" type="checkbox"/> YU Yugoslavia .....                                |
| <input checked="" type="checkbox"/> KG Kyrgyzstan .....                            | <input checked="" type="checkbox"/> ZW Zimbabwe .....                                  |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea ..... |  |
| <input checked="" type="checkbox"/> KR Republic of Korea .....                     |  |
| <input checked="" type="checkbox"/> KZ Kazakhstan .....                            |  |
| <input checked="" type="checkbox"/> LC Saint Lucia .....                           |  |
| <input checked="" type="checkbox"/> LK Sri Lanka .....                             |  |
| <input checked="" type="checkbox"/> LR Liberia .....                               |  |
| <input checked="" type="checkbox"/> LS Lesotho .....                               |  |

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- ☐ .....
- ☐ .....
- ☐ .....

In addition to the designations made above, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except the designation(s) of .....

The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time

<b>Box No. VI PRIORITY CLAIM</b>		Further priority claims are indicated in the Supplemental Box <input type="checkbox"/>	
The priority of the following earlier application(s) is hereby claimed:			
Country <i>(in which, or for which, the application was filed)</i>	Filing Date <i>(day/month/year)</i>	Application No.	Office of filing <i>(only for regional or international application)</i>
item (1) US	18/07/97	60/053,070	
item (2)			
item (3)			
<i>Mark the following check-box if the certified copy of the earlier application is to be issued by the Office which for the purposes of the present international application is the receiving Office (a fee may be required):</i> <input checked="" type="checkbox"/> The receiving Office is hereby requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) identified above as item(s) : _____			
<b>Box No. VII INTERNATIONAL SEARCHING AUTHORITY</b>			
Choice of International Searching Authority (ISA) <i>(If two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):</i> ISA / <u>US</u>			
Earlier search <i>Fill in where a search (international, international-type or other) by the International Searching Authority has already been carried out or requested and the Authority is now requested to base the international search, to the extent possible, on the results of that earlier search. Identify such search or request either by reference to the relevant application (or the translation thereof) or by reference to the search request:</i> Country (or regional Office): _____ Date <i>(day/month/year)</i> : _____ Number: _____			
<b>Box No. VIII CHECK LIST</b>			
This international application contains the following number of sheets: 1. request : 4 sheets 2. description : 48 sheets 3. claims : 3 sheets 4. abstract : 1 sheets 5. drawings : 22 sheets Total : 78 sheets		This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> separate signed power of attorney 2. <input type="checkbox"/> copy of general power of attorney 3. <input type="checkbox"/> statement explaining lack of signature 4. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): _____ 5. <input type="checkbox"/> fee calculation sheet 6. <input type="checkbox"/> separate indications concerning deposited microorganisms 7. <input type="checkbox"/> nucleotide and/or amino acid sequence listing (diskette) 8. <input type="checkbox"/> other (specify): _____	
Figure No. <u>1</u> of the drawings (if any) should accompany the abstract when it is published.			
<b>Box No. IX SIGNATURE OF APPLICANT OR AGENT</b>			
<i>Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).</i> <div style="text-align: center; margin-top: 20px;">         _____        R. Lewis Gable     </div>			

For receiving Office use only	
1. Date of actual receipt of the purported international application:	2. Drawings:  <input type="checkbox"/> received:  <input type="checkbox"/> not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority specified by the applicant: ISA /	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid



# PCT

## FEE CALCULATION SHEET Annex to the Request

For receiving Office use only

International application No.

Applicant's or agent's  
file reference

21927.03

Date stamp of the receiving Office

Applicant

Net Exchange, Inc.

### CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE . . . . . 240.00 T

2. SEARCH FEE . . . . . 700.00 S

International search to be carried out by ISA/US  
(If two or more International Searching Authorities are competent in relation to the international application, indicate the name of the Authority which is chosen to carry out the international search.)

### 3. INTERNATIONAL FEE

Basic Fee

The international application contains 78 sheets.

first 30 sheets . . . . . 455.00 b<sub>1</sub>

48 x \$10.00 = 200.00 b<sub>2</sub>

remaining sheets additional amount

Add amounts entered at b<sub>1</sub> and b<sub>2</sub> and enter total at B . . . . . 655.00 B

Designation Fees

The international application contains 11 designations.

11 x 105 = 1155.00 D

number of designation fees amount of designation fee payable (maximum 11)

Add amounts entered at B and D and enter total at I . . . . . 1810.00 I

(Applicants from certain States are entitled to a reduction of 75% of the international fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the sum of the amounts entered at B and D.)

4. FEE FOR PRIORITY DOCUMENT . . . . . 15.00 P

### 5. TOTAL FEES PAYABLE

Add amounts entered at T, S, I and P, and enter total in the TOTAL box . . . . . 2765.00

TOTAL

☐ The designation fees are not paid at this time.

### MODE OF PAYMENT

☐ authorization to charge deposit account (see below)

☐ bank draft

☐ coupons

☒ cheque

☐ cash

☐ other (specify):

☐ postal money order

☐ revenue stamps

### DEPOSIT ACCOUNT AUTHORIZATION (this mode of payment may not be available at all receiving Offices)

The RO/ US ☐ is hereby authorized to charge the total fees indicated above to my deposit account.

☒ is hereby authorized to charge any deficiency or credit any overpayment in the total fees indicated above to my deposit account.

☐ is hereby authorized to charge the fee for preparation and transmittal of the priority document to the International Bureau of WIPO to my deposit account.

*Handwritten signatures and initials at the bottom right of the page.*

21927.01

# PCT

## POWER OF ATTORNEY

(for an international application filed under the Patent Cooperation Treaty)

(PCT RULE 90.4)

The undersigned applicant(s) (Name(s) should be indicated as they appear in the request):

Net Exchange, Inc.  
11 Broadway, Suite 854  
New York, NY 10004  
US

Hereby appoint(s) as:   X   agent        common representative

GABLE, R. Lewis  
WOLFSON, Michael I.  
DIPPERT, William H.  
WILDES, Morey B.  
DE ROSA, Frank J.

COWAN, LIEBOWITZ & LATMAN, P.C.  
1133 Avenue of the Americas  
New York, New York 10036-6799  
US

to represent the undersigned before   X   ALL the competent International Authorities

       the International Searching Authority  
ONLY

       the International Preliminary Examining  
Authority ONLY

in connection with the international application identified below:


Title of the Invention: APPARATUS AND METHOD FOR EFFECTING  
CORRESPONDENT-CENTRIC ELECTRONIC MAIL

Applicant's or agent's file reference: 21927.03

International Application Number (if already available):

filed with the   US   as Receiving Office and to make or receive payments on  
behalf of the undersigned.

NET EXCHANGE, INC.

  
Name: Stephen S. Miller

Title: President & CEO

July 18, 1998  
Date:

REC'D 15 NOV 1999

WIPO PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 21927.03	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US98/14886	International filing date (day/month/year) 18 JULY 1998	Priority date (day/month/year) 18 JULY 1997
International Patent Classification (IPC) or national classification and IPC IPC(6): G06F 13/00 and US Cl.: 395/200.36, 673		
Applicant NET EXCHANGE, INC.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets.  
☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 5 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 16 FEBRUARY 1999	Date of completion of this report 26 OCTOBER 1999
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer LE HIEN LUU <i>Rigoria Zagan</i>
Facsimile No. (703) 305-3230	Telephone No. (703) 305-9650

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US98/14886

## I. Basis of the report

1. This report has been drawn on the basis of *(Substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments):*

☐ the international application as originally filed.

☒ the description, pages 1-43, as originally filed.

pages NONE, filed with the demand.

pages NONE, filed with the letter of \_\_\_\_\_.

pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☒ the claims, Nos. NONE, as originally filed.

Nos. NONE, as amended under Article 19.

Nos. NONE, filed with the demand.

Nos. 1-20, filed with the letter of 13 AUGUST 1999.

Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

☒ the drawings, sheets/fig 1-22, as originally filed.

sheets/fig NONE, filed with the demand.

sheets/fig NONE, filed with the letter of \_\_\_\_\_.

sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

☒ the description, pages NONE.

☒ the claims, Nos. NONE.

☒ the drawings, sheets/fig NONE.

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box Additional observations below (Rule 70.2(c)).

4. Additional observations, if necessary:

NONE

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US98/14886

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)

Claims 12 YESClaims 1-11 and 13-20 NO

Inventive Step (IS)

Claims NONE YESClaims 1-20 NO

Industrial Applicability (IA)

Claims 1-20 YESClaims NONE NO**2. CITATIONS AND EXPLANATIONS**

(See Supplemental Sheet.)

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 10

**V. 2. REASONED STATEMENTS - CITATIONS AND EXPLANATIONS (Continued):**

Claims 1-11 and 13-20 lack novelty under PCT Article 33(2) as being anticipated by Nakanura.

As to claim 1, Nakanura teaches a method of receiving e-mail, said e-mail including a header and a message body, comprising the steps of:

separating said header from said message body (col. 7 lines 45-67, message header and message body are separated);

storing said message body in a message body field (col. 7 lines 45-67, message header and message body store in different memories);

separating information contained in said header into a plurality of header information fields (col. 9 lines 51-64);

storing said header information fields (col. 9 lines 8-20, col. 9 lines 51-64, message control table has message areas for storing names of sender, receiver, etc.);

linking at least one of said plurality of header information fields with at least a second of said plurality of header information fields or message body field (col. 8 line 60- col. 9 line 20); and

creating a plurality of relationship fields for storing information sufficient to identify said link between said at least one header information field and said at least second header information field or message body field (col. 8 line 60- col. 9 line 20).

As to claims 2-11, 13-16, Nakanura teaches header information fields, relationship fields are stored as tables, fields for identifying message body, information for linking said header information fields and said relationship fields and said message body, multiple e-mails, email message number (col. 8 line 60- col. 9 line 20).

As to claims 17-20, they are related to receiving a message and have similar limitations as claims 1-4; therefore, the discussion above is applied.

Claims 12 lacks an inventive step under PCT Article 33(3) as being obvious over Nakanura in view of Scannell et al (Scannell).

As to claim 12, Nakanura teaches the invention substantially; however, Nakanura does not explicitly teach prompting an e-mail recipient whether to save or delete a second email message if the sender e-mail information is not identical to information stored in said plurality of header information fields. Scannell teaches applying a set of rules to incoming message before appropriate action is taken, and the rules uses various header fields (col. 3 line 50 - col. 4 line 4, col. 5 line 26 - col. 7 line 8). It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of Nakanura and Scannell to automatically scans received message and prompt recipient for further actions because it would allow user to have more control whether to keep the received e-mail message or not.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US98/14886

**Supplemental Box**

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of: Boxes I - VIII

Sheet 11

----- NEW CITATIONS -----

NONE



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> :

G06F 13/00

A1

(11) International Publication Number:

WO 99/04344

(43) International Publication Date:

28 January 1999 (28.01.99)

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(22) International Filing Date: 18 July 1998 (18.07.98)

(30) Priority Data:  
60/053,070 18 July 1997 (18.07.97) US(71) Applicant (for all designated States except US): NET EX-  
CHANGE, INC. [US/US]; Suite 854, 11 Broadway, New  
York, NY 10004 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): MILLER, Stephen, S.  
[US/US]; Apartment 6K, 8 Gramercy Park South, New  
York, NY 10003 (US). ROSS, Lewis, Edward [US/US];  
814 Empire Avenue, Far Rockaway, NY 11691 (US).  
SHAALAN, Mohammed, S. [EG/US]; 800 Kearney Ave-  
nue, Kearny, NJ 07032 (US).(74) Agent: GABLE, R., Lewis; Cowan, Liebowitz & Latman, P.C.,  
1133 Avenue of the Americas, New York, NY 10036-6799  
(US).(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR,  
BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE,  
GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX,  
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TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent  
(GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent  
(AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent  
(AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT,  
LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI,  
CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

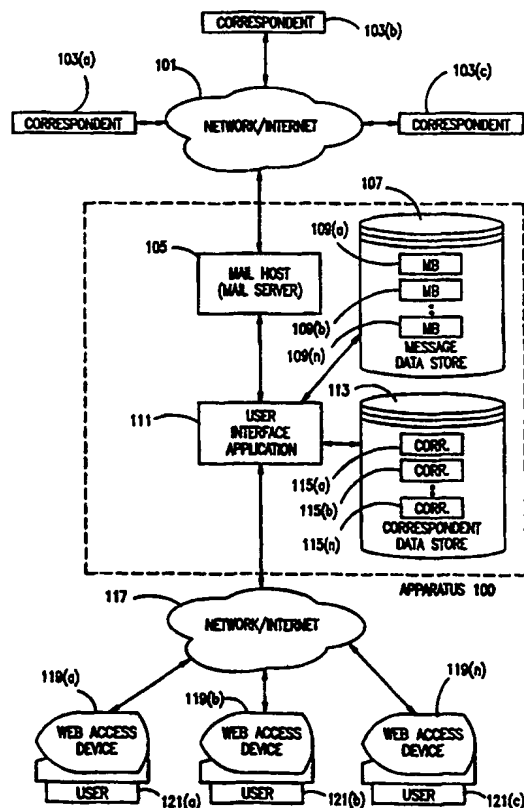
Published

With international search report.

(54) Title: APPARATUS AND METHOD FOR EFFECTING CORRESPONDENT-CENTRIC ELECTRONIC MAIL

## (57) Abstract

Techniques to make e-mail correspondent-centric rather than message-centric (985-999), and reduce junk e-mail (1001-1091). Tabulates (985-999), maintains (985-999), and updates (115(a), 115(b), ..., 115(n), 215) useful information about the user's chosen correspondents, and the history and status of each correspondence series. Filters incoming messages from an unrecognized sender (1013-1031, 1061-1075), asking user (1019) whether to add sender to correspondent list, and if so prompts user (1023) for needed information. Eliminates the need to search for e-mail addresses. Facilitates viewing sequential messages to and from a correspondent. Provides an effective tool to eliminate junk-mail (1013-1031, 1061-1075) by making it simpler and more practical to screen messages or change one's e-mail address. When user (121(a), 121(b), 121(c)) changes his e-mail address, automates notification of user's chosen correspondents, and in some cases can automatically update such correspondents' e-mail address lists. Eliminates need to manually create and maintain mailboxes or folders (985-999). Allows automated organization of e-mail by correspondent (701-711, 215). Is easier to learn and use than previous forms of e-mail.





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5                   **APPARATUS AND METHOD FOR EFFECTING  
CORRESPONDENT-CENTRIC ELECTRONIC MAIL**

**FIELD OF THE INVENTION**

10           This invention concerns electronic mail, and in particular a correspondent-centric way of organizing and processing e-mail to enhance setup, ease of use, convenience, storage, and functionality of e-mail. For end-users the invention simplifies and improves the management of messages  
15 and e-mail addresses, helps manage and reduce junk e-mail, and makes it easier to manage multiple mail-boxes. The invention also helps organizations set up and manage group e-mail systems with less effort and inconvenience, and at lower cost.

20                   **BACKGROUND OF THE INVENTION**

E-mail is widely used today and its rapid growth is expected to continue. Over 70 million people use e-mail, sending over 200 million messages daily. Usage is expected to grow by 50% this year, with rapid growth projected for the  
25 foreseeable future

However, despite e-mail's growing popularity, current e-mail systems have various drawbacks. These include the fact that e-mail systems are hard to use (particularly for non-technical users), that users are often plagued with excessive  
30 junk e-mail, and others drawbacks which will be described below.

The interface problems exist in part because the prior art for storing and displaying messages has evolved in a way that prevents users from readily monitoring key correspondence relationships. This prior art is based on a "message-centric" e-mail paradigm for storing e-mail and communicating information about e-mail to users.

By way of background, E-mail systems are generally either "client-server-based" or "host-based." In client-server systems messages are forwarded to the server, which stores them until the client logs in and downloads them for use and storage on the client (often the server continues to store messages after sending them to the client). In these systems most of the processing takes place on the client, with the server acting as a "store and forward" agent. Examples of client-server-based systems include typical Internet e-mail provided by Internet Service Providers (or "ISP's"), who use free server softwares such as Sendmail, or proprietary server softwares such as CC-Mail or Microsoft Exchange. Their customers handle their mail using client softwares such as Eudora, or the mail readers packaged with Web browsers such as Netscape Navigator or Microsoft Internet Explorer.

In host-based e-mail systems, on the other hand, messages are stored and processed on the server rather than the client. Examples of host-based systems include (1) main-frame e-mail systems (where users connect using "dumb terminals"), (2) private dial-in networks such as America Online or CompuServe, and (3) Web-browser-based e-mail systems

such as HotMail and Yahoo Mail.

The most widely used e-mail protocols today are POP3 and SMTP. POP3 ("Post Office Protocol 3", as specified in RFC 1725) is an interface standard designed to facilitate mail management locally on the user's e-mail device. Any POP3-compliant client can receive e-mail through a POP3-compliant e-mail server. (Note: a recent interface protocol, IMAP4 - RFC 1730, is similar to POP3 except that it gives the client the option of sharing additional functionality with the server.) Likewise, SMTP (Simple Mail Transfer Protocol, as specified in RFC 821) is an interface used by e-mail servers to exchange messages with other servers. In order to exchange mail over the Internet, servers in both client-server and host-based e-mail systems must be SMTP-compliant.

POP3 and SMTP-based e-mail softwares create, send, and store e-mail in a standard format that does not lend itself to certain functions (that format is specified in RFC 822). These standard e-mail messages are self-contained strings of text, delimited into several standardized fields. Key fields in the messages text string include "header" information (e.g. sender's e-mail address, recipients' e-mail addresses, date/time sent, topic, etc.), and message "body". Other fields can be appended, but are principally useful only if sender's or receiver's e-mail system can recognize and use them.

These e-mail softwares store and let the user view these

messages in a standard way, using designated files (also called "mailboxes" or "folders"). The default files are typically an "Inbox" and an "Outbox." When a user sends a message the software typically creates a message text string which it appends to the sender's "Out" file, then transmits the string over the network to the receiver's e-mail system, where the text string is appended to sender's "In" file. Users can create additional files (or "folders"), and can then move messages from the "In" or "Out" files to a new file, but this process typically requires manual effort or programming on the user's part.

In prior art systems it is hard to organize, find, and view useful information about one's correspondences. For example, end users can sort or view messages in only one file at a time (e.g. either the "In"-file or "Out"-file, but not both). Further, within a single file users can sort messages only by using a message field contained in the message itself (e.g. by date, topic, or sender's e-mail address). Users cannot reliably or readily view information pertaining to correspondence with a single correspondent, which information is usually contained in two or more files. For example, users cannot see summarized, compiled information about their correspondence history with any one correspondent, nor can they readily view a chronological correspondence sequence of incoming and outgoing mail between themselves and a specific correspondent. Further, sorting mail by sender e-mail address does not consistently link messages to

correspondents, because the sender and receiver address fields allow many different text formats for messages sent to the same e-mail address.

Another problem with prior art systems is that they don't manage e-mail address lists well. Just as with handling of e-mail messages, the prior art handles e-mail address lists as flat files with no intelligent linking either to other e-mail address lists or to messages. Also, prior art e-mail address lists must be painstakingly created and managed by the user, rather than being automatically created based on correspondence.

The proliferation of junk e-mail is another problem with the prior art. Junk e-mail - often called "spam" - has lately become so pervasive that a Wall Street Journal article recently opined that spamming "has no foolproof solutions." Unfortunately, it is impossible to prevent spam by excluding messages from offending e-mailers, because spammers can easily fake their sender e-mail address. The prior art attempted to deal with spam by letting users create e-mail filters in their local e-mail system. Such a filter sorts incoming e-mail for the recipient into categories determined by the user. The filter simply scans each e-mail message as it reaches the recipient and determines what category it should be placed into. One category is, of course, "discard." Messages which the filter places in that category are automatically discarded. However, these filters have two disadvantages. First, they are hard to create, and

consequently most e-mail user's don't bother to use them.  
Second, filters often filter out the good mail with the bad.

For example, an employee survey sent by e-mail may request the user to indicate his or her sex.

5       The "message filtering technique" in patent 5,619,648 to Canale et. al. April 8, 1997, attempted to reduce junk e-mail. However, it offered an entirely different type of solution than the Invention. Patent 5,619,648 relied on inserting additional information into the standard flat  
10 message file. It further required that all third-party users also use its invention, so that patent's application would only apply within closed loops of users.

Another frustration with the prior art is that it doesn't make it easy to own and use multiple e-mail  
15 addresses. Many current e-mail users have multiple e-mail addresses, but find it difficult to access them at the same time from a single access device.

Various problems plague organizational users of prior art e-mail systems. One problem is that these systems are  
20 hard to set up, and it is hard for users to easily link to other users within the organization.

Another problem with the prior art that plagues organizations is that the prior art consumes excessive computer storage space. This happens in two ways. First,  
25 prior art systems store each message on multiple computers. For example, if a user sends a message to one recipient, that

message is stored in two to four places (e.g., in client-server systems, the message is stored on sender's client computer, recipient's client computer, and often on both sender's and receiver's server; in host-based systems, the server stores the message in a file for the sender and again in a file for the receiver). Further if a user addresses a message to ten people, then as many as 22 identical copies of that message may reside on the clients and servers of the sender and his addressees!

10       The second storage problem with the prior art happens when a user wants to file a message under more than one topic. The prior art does this by filing a copy of the message in each file (or folder) selected by the user. If a prior art user wants to store a message under ten topics, 15 then ten copies of the message will be stored (and in the more recent IMAP4 systems as many as 20 copies of the message will be stored - 10 on the client and 10 on the server!).

20       The problems with the prior art exist because since the time of e-mail's development in the 1960's and early 1970's, e-mail has been based on the currently outdated "flat-file" database technology. Flat-file databases, also called also "non-relational" databases, store information as a simple series of "records", each containing identical "fields" of information (like subsequent rows a spreadsheet, each 25 containing one field of information for each column of the spreadsheet). E-mail messages were structured as flat-file records - self-contained strings of text, delimited into



various standardized fields. Key fields in each message's text string included "header" information (e.g. sender's e-mail address, recipient's e-mail address, date/time sent, topic, etc.), and message. Other fields could be appended, but were principally useful only if both the sender's and receiver's e-mail system could recognize and use them.

Prior art e-mail systems store, manage, and display e-mail messages in limited ways dictated by flat-file database architecture. These systems typically file e-mail messages two or more designated flat files (also called "mailboxes" or "folders"). A file contains a series of messages, each of which is analogous to a record, analogous to a "row" in a table or spreadsheet (as described above). The default files are typically "Inbox," and "Outbox," files. For example, when a user sends a message, his system typically creates a single string of text containing all the fields in the message, and appends this string to the the user's "Out" file. The system then transmits the string over the network to the recipient's e-mail system, where the text string is appended to the recipient's "In" file. Consequently, each user's In-box and Outbox grows longer and longer until the user does something with a message. Users can solve this problem by creating additional files (or "folders"), and can move messages from one folder to another. However, this approach takes thought and effort from the user.

In summary, some of the disadvantages of the prior art are:

1. It does not organize e-mail automatically - instead requires users to organize their e-mail manually; Inboxes and Outboxes grow large and unwieldy because messages are not automatically filed;
- 5 2. Hard to see on a single screen the chronological correspondence to and from a given correspondent;
3. Users cannot view on a single screen consolidated information about their correspondence history with multiple correspondents;
- 10 4. Hard to remember or find correspondents' e-mail addresses;
5. Doesn't remind users about key information triggers, such as whether the last correspondence with a party was incoming or outgoing, and which  
15 correspondences have lapsed.
6. Hard to find past messages;
7. Hard to view groups of past messages in meaningful ways;
8. Users can view messages from only one folder at a  
20 time;
9. Time consuming to set up, maintain, and use multiple e-mail address lists;
10. Hard to identify or screen junk e-mail;

11. Impractical to change one's e-mail address;
12. Problematic for an e-mail user to own and manage more than one e-mail address;
13. Users who own multiple e-mail addresses find it  
5 hard to move selected contacts and their related correspondence history from one e-mail address to another;
14. Hard to share access to a single e-mail address with others;
- 10 15. Hard for organizations to instantly set up an e-mail network for their constituents;
16. Hard for organizations to set up and maintain a single or multiple e-mail address lists for their constituents;
- 15 17. Hard for organizations to regulate access to organizational e-mail address lists.
18. Uses excess network storage space because duplicate copies of each message must be stored in multiple network locations;
- 20 19. Uses excess storage space on user's own computer, because duplicate copies of messages must be stored for each folder in which a message is filed;

In summary, the prior art provided a standard flat-file

interface which has made it easier to write e-mail programs, but not easier to use them. Problems with prior art e-mail systems include the following: they are hard to use, don't manage messages in optimal ways, fail to manage e-mail addresses well, suffer from excess junk e-mail, make it difficult to manage multiple mailboxes, and are inconvenient for organizations to set up and maintain.

#### OBJECTS AND ADVANTAGES

The object of the invention is to provide a simple, easy-to-use, intuitive e-mail system with enhanced protections from junk e-mail, and which overcomes various drawbacks of prior art e-mail systems.

Accordingly, several objects of the invention are as follows:

1. View consolidated information about their correspondence history with all correspondents.
2. Easily view a chronological correspondence to and from a given correspondent.
3. Avoid the inconvenience of remembering or looking up e-mail addresses.
4. Eliminate or reduce junk e-mail by either screening incoming mail by correspondent, or conveniently changing one's e-mail address while simultaneously effecting the change in the systems of desired correspondents.
5. Have their e-mail organized automatically by the system, rather than having to organize it manually.

6. More easily be reminded about certain key information triggers, such as whether the last correspondence with a party was incoming or outgoing, and which correspondences have lapsed.

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#### DESCRIPTION OF DRAWINGS

FIG. 1 shows a high-level block diagram of the apparatus for the preferred embodiment of the invention.

FIG. 2 shows a high-level block diagram of the apparatus for another embodiment of the invention.

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FIG. 3 is a diagram showing one example of a table structure for the correspondent data store used in the invention.

FIG. 4 is a flowchart showing the processing of incoming messages.

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FIG. 5 is a user screen showing pending e-mail messages for a user using the preferred embodiment.

FIG. 6 is a user screen showing one of the forms of chronological correspondence with one correspondent, for the preferred embodiment.

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FIG. 7 is a user screen showing aggregate correspondent information and options for all correspondents on the "Contacts and Correspondence" screen for the preferred embodiment.

FIG. 8 is a user screen showing the "Change E-mail Address" option for the preferred embodiment.

FIG. 9A is a high level system architecture diagram of the invention.

5        FIG. 9B is a functional block diagram of the internal structure of the incoming message server.

FIG. 9C is a functional block diagram of the queue manager server.

10       FIG. 9D is a functional block diagram of the internal structure of the mass storage server.

FIG. 9E is a functional block diagram illustrating the outgoing queue manager/message server.

15       FIGS. 9F and G illustrate respectively a generalized and a more particular diagram of the data tables comprising the mass storage and the relationships between the data tables.

FIG. 9H is an object relation diagram which illustrates the structure of the message object.

FIGS. 10A and B comprise together a flow diagram showing how an input message is processed.

20       FIG. 10C is a flow diagram showing how an output message to be transmitted is processed.

FIGS. 11A, B, C and D respectively illustrate the data structure of a request for retrieving a message, a correspondent information request, a correspondent message history request and a topic content request.

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FIG. 12 is a table showing all of the correspondent

addresses collected by a user, the past history of the messages from those correspondents and a summary of the pending messages.

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#### SUMMARY OF THE INVENTION

The invention, therefore, compiles, updates, and displays additional summary information about a user's correspondence, and lets the user make decisions, take new actions, and enjoy new options facilitated by this new information. The invention allows a "correspondent-centric" user interface, to replace the "message-centric" interface imposed by the prior art.

This additional information also facilitates eliminating junk e-mail, by either (a) screening senders to determine which messages to accept, or (b) making it possible to readily change one's e-mail address without excessive inconvenience.

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#### DESCRIPTION OF INVENTION

The following description begins with an overview of the invention and then describes in detail how the invention is implemented in apparatus to provide a user-friendly correspondent-centric interface and reduce junk e-mail.

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**FIG. 1** shows a high-level overview of the preferred embodiment of the invention, and is shown as apparatus 100.

This embodiment assumes that clients will access their e-mail through the Internet using a Web browser installed on any Internet access device. (This configuration will be further described below.)

5           Apparatus 100 is employed in network 101 which connects any number of e-mail users or correspondents 103 (a ... n). Network 101 may be the Internet, a commercial e-mail network, or a privately owned network system. Each correspondent 103 is connected to network 101 by means of a link over which the  
10 correspondent 103 can send and receive e-mail messages. Mail or message items are sent by correspondents 103 to and from each other. Apparatus 100 allows users 121 (a ... n) to send and receive e-mail messages of whatever type used in the network (typically internet mail standard messages).

15           When a new message is received by apparatus 100 from network 101, it is intercepted by mail host 105 (also called a mail server). Mail host 105 can be any computer configured as a mail server or mail host, having e-mail server software installed, such as Sendmail (for UNIX servers), other  
20 internet standard mail servers, or a proprietary mail server such as Lotus Notes, CC Mail, or Microsoft Exchange. When mail host 105 receives an incoming message from Network 101 it handles the message in the standard way, identifying the appropriate recipient. However, traditionally mail host 105  
25 would post the message directly to the message data store



107, posting it in mailbox 109 (a ... n) for the appropriate user 121 (a ... n). In contrast in apparatus 100, mail host 105 sends the message to user interface application 111, which performs incoming message processing 300, (see FIG. 3).

5 Based on the results of incoming message processing 300, user interface application 111 either deletes the message or stores it in the appropriate mailbox 109 (a ... n).

Subsequently user interface application 111 uses the new message information to update the appropriate correspondence  
10 table 115 (a ... n) for the respective user 121 (a ... n).

Users 121 (a ... n) receive and send e-mail using Web access devices 119 (a ... n). Web access devices 119 (a ... n) can be any device enabled with "Web browser" software. Web browser software is any software which reads, displays, and  
15 allows user interaction with files written in "HTML" (Hypertext Markup Language), in conformance with "HTTP" (Hypertext Transfer Protocol). Examples of Web browser software include Netscape Navigator 3.0, Microsoft Internet Explorer 3.0, America On Line software 3.0, and the software  
20 installed on WebTV units. Web access device 119 (a ... n) would have a terminal, monitor, or viewing screen, a CPU, RAM memory, a keyboard or other input device, and optionally a hard disk. The Web access device would be linked to the Internet or a proprietary network through a modem, ethernet  
25 card or other network link. Web access devices 119 (a ... n)

could be a personal computers, network computers, televisions with WebTV units attached, Web telephones, or other Web access devices which are currently being developed.

When an e-mail user uses apparatus 100 to access his e-mail, he will use his Web browser to link to apparatus 100 through Network/Internet 117. When he links to user interface application 111 he will see, using his web browser software, an interface which combines information from message data store 107 with correspondent data store 113. This combination allows novel views of e-mail such as those shown in FIGS. 5 - 8.

When an e-mail user uses apparatus 100 to send an e-mail message, the message is posted to message data store 107, and in addition, information from the message is used to update correspondent data store 113. The message is then sent to the appropriate recipient through either network 101 or network 117, as appropriate.

FIG. 2 shows a high-level overview of another embodiment of the invention, shown as apparatus 200. This embodiment assumes that e-mail users will have an e-mail software which embodies the invention installed on their local computer (more about this below).

Most of the components of FIG. 2 are similar to those of FIG. 1, and are labeled with the same numbers except that the

first digit is "2" instead of "1". The principal difference between FIG. 2 and FIG. 1 is that in FIG. 2 the invention resides at the user's local computer (see apparatus 200), instead of at the host or server computer level (as in apparatus 100).

In FIG. 2 incoming e-mail comes to mail host 205, and is transmitted through network 217 to user 221's client e-mail computer 219, as would typically happen without the invention in traditional e-mail systems. In apparatus 200, the user interface application 211 resides on client e-mail computer 219, incorporated into the local e-mail client software. User interface application 211 otherwise performs the same functions as user interface application 111. In apparatus 200 message data store 107 and correspondent data store 113 (from apparatus 100) are combined into local hard disk 208, which contains message data store 209 and correspondent data store 215 for a single user, rather than for multiple users 109 (a ... n) and 115 (a ... n) in 107 and 113 in apparatus 100.

FIG. 3 shows one embodiment of a data table for correspondent information to be contained in correspondent data store 115 (a...n) or 215. The top entry in each column in the table in FIG. 3 describes the category of information maintained about each correspondent 103 or 203 with whom

users 121 (a...n) or user 221 corresponds. Each subsequent line in the table describes the specific information for each of correspondents 103 (a...n) or 203 (a...n).

FIG. 4 shows new message processing 400. For incoming  
5 messages, new message processing 400 is applied to each message to assure that, before saving the message to message store 109 (a...n) or 209, the message is linked to the appropriate correspondence record in correspondent data store 115 (a...n) or 215, and so that the correspondent data store  
10 record can be updated.

New message processing 400 starts after a message is received by mail host 105 or 205 and has been transmitted by the mail host to user interface application 111 or 211. We will assume here that the new incoming message is addressed  
15 to user 121(a) or 221(a). Such message would have either been sent through network 101 or 201 from a correspondent 103 (a...n) or 203 (a...n), or alternatively from a user 121 (b...n) or 221 (b...n), transmitted through network 117 or 217. Upon receipt of this message, mail host 105 or 205 would transmit  
20 the message to user interface application 111 (in the case of apparatus 100) or through network 217 to user interface application 211 (in the case of apparatus 200). Upon receipt, user interface application 111 or 211 would begin new message processing 400.

In new message processing 400, user interface application 111 or 211 performs step 401, which is to identify and isolate the e-mail address of the message's sender. In this process user interface application 111 or 5 211 scans the field of the message which contains the sender e-mail address, to isolate the e-mail address from any additional text in the field. Then user interface application 111/211 performs step 403, comparing the sender's e-mail address to addresses in correspondent data store 10 115(a) or 215, to determine if there is a match.

If the result of step 405 is yes, user interface application 111/211 performs step 425 on the message, which is to save the message to the message data store 109(a) or 209, noting the number of the record in 109(a)/209 in which 15 the message is saved, which record number will be used in step 427. The message is also marked as "in," reflecting that the message was incoming rather than outgoing. In step 427 the last four fields of the record identified in step 405 in the correspondent data store 115(a) or 215 (also shown in 20 FIG. 3) are updated to reflect information resulting from saving the new message to message data store 109(a) or 209. Process 400 is then complete.

However, if the result of step 405 is no, user interface application 111/211 begins step 407. In step 407 user 25 interface application 111/211 again scans the message fields

to determine if there is information to guess the name of the sender. For example, the name of the sender is often included within <...> brackets in the sender e-mail address field. If the answer to step 407 is yes, this information is temporarily stored as default sender name. Otherwise, step 409 is applied to temporarily store a generic sender name (such as "unrecognized sender," or "?") as the default sender name for the message.

Step 411 then prompts the user whether he/she wants to store or delete the message. (In making this decision the user can optionally read the text of the message.) If the user response in step 413 is "delete," step 415 deletes the message. If the user's response in step 413 is "store", user interface application 111/211 proceeds to process step 417.

Step 417 displays the currently stored default sender name for the message in a text box which can be revised by the user. Step 417 also asks the user to perform step 419, in which the user either accepts the default sender name, or revises it and confirm the revision.

The user interface application 111/211 then performs step 421, which is to save the message to the message data store 107, noting the record number of the newly saved record, which will be used in step 423.

In step 423 a new record is created in the correspondent

data store 115(a) or 215 (see also FIG. 3). This record will be associated with all subsequent incoming or outgoing messages to or from this sender. This information for the six fields listed in the correspondent table in FIG. 3, will

5 be: (1) "correspondent name": the user-confirmed sender name for this message from step 419; (2) "e-mail address": the sender's e-mail address (previously identified for the message in step 401); and (3) "links to msgs. in msg database": the record number in which the instant message

10 was just stored in the message data store 109(a) or 209; (4) "# of messages in database": in this case "1" (since this is the first message); (5) "last message type (in or out)": "in" (since this was an incoming message); and (6) "date of last correspondence": the date/time of the instant message

15 will be inserted. 400 is then complete.

FIGS. 5 - 8 are user screens made possible by the invention, and in particular the automated maintenance of the table in FIG. 3, reflecting the information maintained in correspondent data stores 115 and 215.

20 FIG. 5 shows an example of the initial e-mail screen seen by a user of the preferred embodiment. The first table 500 shows a summary of all pending e-mail not yet responded to by the user. The two lines in 503 show two messages which have been recognized as potentially junk mail because the

25 sender's identifying information was not contained in the

correspondent table in FIG. 5. Option 505 allows the sender to automatically delete these two messages from unrecognized senders.

FIG. 6 shows the user screen seen when the user clicked on the first line in table 500, line 501. Note that the user sees not only the message from the sender indicated in 501, but he also sees past incoming and outgoing correspondence, in reverse chronological order, with that sender.

FIG. 7 shows the screen the user sees when he clicks on line 507 in FIG. 5. The user can instantly open a pre-addressed e-mail screen to communicate with any user in column 701 by clicking on the user's name. The user can open an e-mail window pre-addressed to multiple users by clicking on boxes in the three columns in 703, then clicking on the confirm button 711 below. Note also that the user can see the date of his last incoming or outgoing message with each correspondent by looking in column 705. Further, the user can see whether that message was incoming or outgoing by looking in column 707. And the user can also see how many previous incoming or outgoing messages are on file for each correspondent by looking in column 709. Each of these capabilities are made possible by referencing the information in the table in FIG. 3, reflecting correspondent data stores 115 for the respective user, or 215.

FIG. 8 shows a user screen which can be used to



eliminate junk mail. This screen is one of the options available by clicking on 509. Notice that this screen lets users change their e-mail address and select which of their correspondents will be able to send e-mail to the new address. Certain correspondents - in this case those using the same e-mail provider as the user - will need take no action, and future messages sent by such correspondents to the user will automatically be routed directly to the user. The remaining correspondents - those using a different e-mail provider from the user - will receive an e-mail notification that the user's e-mail address has changed, so that they can redirect subsequent messages to the user's new e-mail address.

Figure 9-A is a high-level system architecture diagram of the invention apparatus. As shown in figure 9-A, an Incoming Message is being communicated via a signal transmitted over a limited number of transport media (e.g. e-mail, voice, Fax, or any other way of communication). Depending on the transport media, a message could be delivered to one (or more) Incoming Message Server(s) (903). The function of the Incoming Message Server is to convert the media-dependent message into a common message object (Diagram 9-H) that is communicated internally in the system.

The Message Object represents the information contained in the message string, However in a more readable format. Using this format, it is easier to the system to handle logic

decisions in a fraction of the time required to re-scan the message every time searching for a field.

After a Message has been converted to a Message Object,  
5 the incoming Message Server (903) sends the object to one of  
one (or more) identical Queue Manager servers (907). The  
function of the Queue Manager is to sort messages according  
to a given priority algorithm, then send them one at a time  
to the Mass Storage Server (909). If one Queue Manager server  
10 becomes overloaded, some of the objects on this server will  
migrate to another Queue Manager server according to a given  
algorithm.

Mass Storage is where all data and system information is  
15 stored, searched, and updated through Queue Manager servers  
(907) and Application Servers (913)

An Application Server is responsible for providing  
transformations upon Message Objects moving between User  
20 Interface Servers (915) on one hand, and the Mass Storage  
Server (909) and Outgoing Queue Manager servers (917) on the  
other hand. Also, the Application Server communicates with a  
State Server (913) to temporarily store current login  
information about a specific user. The State Servers (913)  
25 and Application Servers (911) together provide a way of  
keeping track of user activity or state during a given  
session. The State is stored for a limited amount of time  
before being discarded.

The User Interface Servers provide a way for users (Customers) to handle input/output operations. Through communication with the Application Server (911), a user can  
5 get access to only his/her information on the Mass Storage Server (909).

After a user composes a message through User Interface Servers (915), the message is passed to the Application  
10 Server (911), which will, in turn, pass it in the form of a Message Object to the Outgoing Queue Manager (917). The Outgoing Queue Manager is responsible for maintaining this object sorted among other objects according to a priority determined by a given algorithm. Sending the object to the  
15 Outgoing Message Server, which will, in turn, send an Outgoing Message (919) as a communicated signal transmitted over a limited number of transport media (based on user choice).

20 If one Outgoing Queue Manager server becomes overloaded, some of the objects on this server will migrate to another Outgoing Queue Manager server according to a given algorithm.

The Firewall (905) blocks connection from the outside  
25 world, preventing direct access to servers inside it. The firewall allows only the Incoming Message Server (903), the User Interface Server (915), or an Outgoing Message Servers (917) to communicate with the protected servers inside the

firewall, thus providing a high level of security for data stored on the Mass Storage (909).

Figure 9-B shows the internal structure of the Incoming Message Server (903). As shown in figure 9-B, the Incoming Message (901) is delivered to a Device-Specific Driver/Daemon (931) which handles transport media-dependent incoming messages according to their media (e-mail SMTP daemon, Fax Receiver, etc.).

10 After being converted to a stream, file, or other standard input forms, the Message is passed to a Local Delivery Agent (933), which receives a request from a Device-Specific Driver (931) to deliver a message to the local machine users. A local delivery agent converts the message  
15 from media-dependent to a stream format, and sends that to a Message Parser (935).

The Message parser 935 converts the message stream to a media-independent message object.

20

Through parsing, the message key fields are extracted from message headers and stored in message object properties (attributes) to be accessed by other system components. After the message object has been populated with data, it is then  
25 sent to an Object Trading Layer (937) which is responsible for delivering a given message object to the least loaded Queue Manager server (907) according to work load statistics provided by the Queue Managers (907)

Figure 9-C shows the internal structure of the Queue Manager Server (907). As shown in figure 9-C, the Object Trading/Migration Layer (941) communicates with an Object Trading layer (937) of the Incoming Message Server (903). Both layers work to deliver Message Objects with embedded message information. The Migration Layer delivers objects to the next unloaded Object Queue Manager server, in case the Object Queue Manager (943) is overloaded or failing.

10

The Object Queue Manager 943 holds Message Objects in a dynamic data structure sorted by priority for delivering the message. Whenever the Object Queue Manager becomes overloaded, it decides according to a given algorithm which objects should be migrated to the next available Object Queue Manager (907) and sends a request to the Object Migration layer (941) to carry on the object migration process.

15

When the Object Queue Manager (943) decides an object is next to be delivered, it passes the object to an Insertion Module (945), which interacts with the Mass Storage Server (909) to store the message. The Insertion Module (945) contains the decision logic for inserting the Message Object according to the type of mailbox to which the message was directed

20

25

The Insertion Module (945) does not know anything about mass storage structure, tables, or field names. Instead, it

sends a series of remote method invocations to the Mass Storage Interface (951), which in turn knows how to deal with the internal structure of the Mass Storage.

5           Figure 9D shows the internal structure of the Mass Storage Server (909). As shown in figure 9D, a Mass Storage Interface 951 provides high level methods that will be called by the Object Insertion Module (945) through RMI (Remote Method Invocation) to store Message Objects. The Mass  
10   Storage Interface 951 is the responsible for the actual communication with the Mass Storage Server, also referred to as the Database (953). The Mass Storage (953) is the actual location for storing and manipulating users' Messages, Correspondents, and Topic information. See figure 9-F for  
15   details on the entity relationship diagram of the database.

Figure 9E shows the internal structure of the Outgoing Queue Manager/Message Server (917).

20           As shown in figure 9E, an Object Trading/Migration Layer (961) communicates with the Object Trading Layer of the Application Server (911). Both layers work to deliver Message Objects with embedded outgoing message information.

25           The Migration Layer communicates with the Object Queue Manager (963) to deliver objects to the next unloaded Queue Manager. The Object Trading/Migration Layer (961) passes the message to an Outgoing queue Manager (963) which holds

Message Objects in a dynamic data structure sorted by priority for sending the message. Whenever the Object Queue Manager (963) becomes overloaded, it decides which objects should be migrated to the next available Queue Manager (917) according to a given algorithm, and sends a request to the Object Migration Layer (961) to carry out the object migration process. The Object Queue Manager (963) passes Outgoing Messages (919) to a Message Sending Module (967) which reconstructs a media-dependent message from the generic Message Object, and sends the resulting Media-dependent Message through Device-Specific Drivers (967).

Device-Specific Drivers (967) transports media-dependent Outgoing Messages according to their media (e-mail SMTP daemon, Fax Sender, etc.).

Figure 9-F is a high level entity relationship diagram for Mass Storage 953. The diagram represents the relation between entities on a conceptual level. Each block in the diagram represents a structured "data table" (also called a "message store" or "database"). These data tables are comprised of records, each containing "fields" of information. (Records are similar to rows in a spreadsheet, where as fields are similar to the columns in a spreadsheet, with the column headers in spreadsheets being similar to the record identification name for the information contained in the column.)

Figure 9-G is lower level entity-relationship diagram. The blocks shown in 9G represent the same data tables as those in Figure 9-F, with the only difference being that in 5 9G each block contains additional description about the information stored within the data table represented by that block.

10 In both 9F and 9G, lines 999 connecting pairs of data tables indicate that those two tables are "related," which means that the records in one data table may be linked to records in the other. The connecting points of these lines sometimes fork into three prongs, which indicates that multiple records from a table so marked may be linked to a 15 single record in the related table - a "many-to-one" relationship. the relationship is also indicated by the digits "m" (many) or "1" (one) next to the point where each relationship line intersects with a block representing a table.

20

The block or data table numbers in 9F and 9G are identical, except that the data tables in 9G are labeled with a "'" symbol (e.g., data table 985' in Figure 9F is labeled 985' (with an apostrophe) in 9G.

25

As shown in figure 9-G, User table (985) maintains information about each user of the invention. User ID is a unique identifier for that user. Other information in the



User table 985 includes but is not limited to, User first name, user last name, and user password for system logins.

A User will have at least have one E-mail Box, (i.e. an e-mail address which belongs uniquely to such User). In this E-mail Box the user receives incoming messages addressed to his E-mail Box, and from this E-mail Box the User sends outgoing messages. Note that an E-mail Box is like one's personal postal mailing address. Just like in the physical world a person can have more than one mailing address (e.g. home and business), a User of the Invention can have more than one E-Mail Box or personal e-mail address. In fact the Invention makes it easier to manage multiple E-Mail Boxes, as is further discussed herein. Note, therefore, that there is a one-to-many relationship between the User data table and the E-Mail Box data table. The relation between Users and their E-Mail Boxes is maintained in the E-Mail Box data table 987.

The E-Mail Box data table 987 also contains fields for storing other information relating to each of the Users' E-Mail Boxes, such as an arbitrary title the users may name their E-Mail Box and also an identifier for E-Mail Box type.

Types of E-Mail Boxes which the invention uses included Trusted (meaning the address is used only for correspondence with correspondents E-Mail Box 987. The minimum information which about each correspondent which is maintained in the User-Correspondent data table is the correspondent's e-mail

address. Other information about correspondents in the User-Correspondent data table may include first and last name, description, comments, phone, address, etc.

5           Note that Correspondent data table 989 embodies several key innovations in the Invention. (1) Whereas in the prior art, each e-mail address on an e-mail address list must be consciously entered by the user, in the Invention the Correspondent data table becomes an e-mail address list, and  
10 the system automatically creates posts an entry to the Correspondent data table for any message sent to or accepted from a correspondent not already contained in the Correspondent data table (see more about this process in Figures 10A, 10B, and 10C below). This feature greatly  
15 simplifies the task of keeping track of e-mail addresses. (2) Correspondent data table 989 can maintain additional information about correspondents, which can be displayed in helpful ways. For example, while prior art messages often come from a sender whose identity is not readily  
20 recognizable, a User of the Invention can identify a name or descriptive term for each correspondent, so that upon receiving a message from something like as jxam5@domain.com, the system will inform the User that the message is from RealName@domain.com. (3) The Correspondent data table gives  
25 the Invention a completely new and powerful way to identify and deal with junk e-mail. Where as all junk-mail filtering systems to date are "negative filters" (i.e., they search for information within a message to be used to identify the

message as bad), our Invention provides a powerful "positive" filter ~~✕~~ i.e., we can identify all incoming messages received from a correspondent on our Correspondent data table, and automatically mark all other incoming messages as suspect.

5

All messages, whether incoming or outgoing, are stored in Message data table 993, which is similar to Message Data Stores 107 and 209. For each incoming or outgoing message which User has sent or received to/from any Correspondent from a given User E-Mail Box, Message data table 993 contains all the message information contained in the original Internet-standard e-mail message (defined by the SMTP message protocol described in the "Background of the Invention" above); however within a Message data table record all the "header" the information (as defined by SMTP) is stored in a single field of the record, and also all header information has been parsed and stored separately. All header information except the sender and receiver information is stored in specific fields within the Message data table record; the sender/receiver information, however, is stored in the Message-Correspondent Relationship data table, which is described below.

The Message-Correspondent Relationship data table 995 is the repository for links between messages stored in the Message data table 993 and correspondents stored in the Correspondent data table 989. Each record in the Message-Correspondent Relationship data table 995 will contain

pointer information to a single message in Message data table 993 and a single correspondent in Correspondent data table 989.

5       Note that the Message-Correspondent Relationship data table 995 is a key innovation in the Invention. Whereas in prior art e-mail systems at least one instance of a message must be stored on a computer somewhere for every party to a message (i.e. the sender and each address), in the Invention  
10   the message is stored only once, without regard to the number of parties to the message. The Invention accomplishes this result by replacing the prior art's multiple instances of the same message, with a single copy of the message, and multiple instances of only short pointer records, which are stored in  
15   the Message-Correspondent Relationship data table 995.

Another key innovation of the Invention which is embodied in the Message - Correspondent Relationship data table 995 is that the Invention can automatically link all  
20   messages to and from a given correspondent. This facilitates unique reports such as Figures 6, as well as columns 705, 707, and 709 in Figure 7.

Topic data table 991 represents topics which users can  
25   create to categorize their messages, so that it is easier to retrieve messages when they are needed in the future. This table contains a list of all topics which a User has created for incoming and outgoing messages pertaining to to Email Box

987.

Message-Topic Relationship data table 997 is a repository for links between messages stored in Message data table 993 and topics stored in the Topic data table 991. Each record in the Message-Topic Relationship data table 997 will contain pointer information to a single message in Message data table 993 and a single topic in Topic data table 991.

10

Note that the Message-Topic Relationship data table 997 is another key innovation in the Invention. Whereas in prior art e-mail systems at least one instance of a message must be stored on a computer somewhere for every folder in the prior art stores a message, in the Invention the message is stored only once, without regard to the number of topics (analogous to folders) to the message is related. The Invention accomplishes this result by replacing the prior art's multiple instances of the same message in multiple "folders" or files, with a single copy of the message and multiple instances of short pointer records stored in Message-Topic Relationship data table 997.

Also note that the database structure of the Invention, including the data tables described in Figures 9F and 9G make it possible to solve various other problems with the prior art, including all of the 19 problems listed at the end of the "Background of the Invention" section above.

Figure 9-H is an object relation diagram which describes the structure of the Message Object. The Message Object represents the information contained in the message string, however in a more readable format. Using this format, it is easier for the system to handle logic decisions in a fraction of the time required to re-scan the message every time searching for a field.

As shown in figure 9-H, the Message Object (1101) is composed of a set of properties, and two vectors (dynamic arrays). The first vector is the recipient vector (1103) which contains a number of recipient objects (1105). The second vector is the attachment vector (1107) which contains a number of attachments object (1109).

15

The Properties of Message Object (1101) includes.

CharSet	Character set used to compose the
MessageHeader	Contain complete header of the message
SubType	Content Subtype
Type	Content Type
Date	Date Message was sent
FromFirstName	Senders First Name
FromLastName	Senders Last Name
FromAddress	Senders e-mail address
MessageID	Message Universal unique ID
MessageBody	Contain body of message
Priority	Message priority
ReplyToName	Reply to name
ReplyToAddress	Reply to E-mail address
Subject	Message Subject
MimeVersion	Contain information about MIME format

The properties of Recipient Object (1105) includes.

Address	E-mail address
First Name	First Name of
Last Name	Last Name of
Type	Type of the

The properties of Attachment Object (1109) includes.

AttachmentBody	Encoded attachment
SubType	content subtype
Type	content type
Description	Description of the attachment, fetched from
Encoding	Encoding type (e.g. base64 x-uuencode)
FileName	File Name of attachment
Size	Size of encoded attachment

Figures 10-A and 10-B explain how the business logic  
5 applied to an incoming message. Step 1001 receives and  
parses different fields in the message string are converted  
to properties of a Message Object. The Message Object  
represents the information contained in the message string,  
however in a more readable format. Using this format, it is  
10 easier for the system to handle logic decisions in a fraction  
of the time required to re-scan the message every time  
searching for a field.

Step 1003 parses the message string to convert the  
15 message string to a Message Object. Having the message  
object populated with key fields, step 1007 searches the  
database 971 and 985 to determine if the user e-mail address  
exists. If that address exists, then step 1009 further  
searches to retrieve user preferences that belong to that e-  
20 mail address. Based on the e-mail address type determined in  
step 1011, one of two directions will be chosen. Either the  
e-mail address could be an un-trusted e-mail address (i.e.

used for web surfing or in correspondence with un-trusted correspondents), or the e-mail is a trusted e-mail address (i.e. used in correspondence with trusted correspondents).

5           In case of an un-trusted e-mail address, the database is searched in step 1013 for a matching correspondent address in the correspondent data store (989 of figure 9-G) if the correspondent address exists, then the message is saved in step 1015 into the message data store 993 of figure 9-G, the  
10   relation between the user, correspondent and the message is stored by step 1017 in the Message - Correspondent data store 995 of figure 9-G.

          However if the correspondent address does not exist in  
15   the correspondent data store, then step 1019 prompts the user to either store or delete the message. If the user response was to delete the message, then step 1031 deletes the message from the message data store.

20           If the user response is to store the message, step 1023 prompts the user to either accept or revise the user information before being stored in the correspondent data store. Step 1029 stores the message in the message data store and the relation between the user, correspondent and  
25   the message is stored by step 1029 in the Message - Correspondent data store.

Trusted e-mail is processed as shown in Figure 10-B.



First, step 1051 searches the database is searched for a matching sender address in the correspondent data store. If the address exists, then step 1053 saves the message in the message data store, the relation between the correspondent, the user and the message is stored in step 1055 in the Message - Correspondent data store.

However if the sender address does not exist in the correspondent data store then based on the user preferences information as determined in step 1057 (retrieved from the database in step 1009) one of the following options may be selected by the user in Step 1059:.

1- If the user chooses in step 1061 to flag messages coming from correspondents not in correspondent table as unrecognized correspondents, this will be highlighted to the user and choice of deleting all flagged messages will be offered to him/her. Then, step 1063 prompts the user to either store or delete the message. If the user response determined in step 1065 was to delete the message, then the message is deleted from the message data store. Otherwise the user response is to store the message, the user is requested by Step 1067 to either accept or revise sender information before being stored in the correspondent data store. The message is stored in message data store and the relation between the user, the correspondent and the message is stored by step 1071 in the Message - Correspondent data store.

2- The user chooses by step 1077 to send the message back to the correspondent with a message stating that user does not exist on the server (bounce the message back).

3- The user chooses by step 1079 to forward the message to another e-mail address.

Figure 10C explains the business logic applied to an outgoing message. When user sends a message to the system as shown in figure 10C, the message is parsed in step 1083 and a Message Object is created. The Message Object represents the information contained in the message string, however in a more readable format. Using this format, it is easier to the system to handle logic decisions in a fraction of the time required to re-scan the message every time searching for a field.

Having the message object populated with key fields, step 1087 makes a search in the database to determine if the correspondent e-mail address exists in the Correspondent data store. If that address exists, then the message is saved by step 1089 to the message data store, the relation between the user, the correspondent and the message is stored in step 1091 in the Message - Correspondent data store.

If the recipient address was not found in the correspondent data store, then the user is requested by step 1093 to either accept or revise recipient information before being stored by step 1095 in the correspondent data store.

The message is stored by step 1099 in message data store and the relation between the user, correspondent and the message is stored by step 1097 in the Message - Correspondent data store.

5

Figures 11 A to D show the format used for exchanging information between the user and the apparatus over Internet 101/117. As Shown in Figure 11A, a request for retrieving a message (1201) includes a customer id, customer e-mail address id, contact e-mail address and message id. Every two fields are separated by a separation indicator (-).

As shown in Figure 11B, a block (1203) shows a correspondent information request. The request includes a customer id, customer e-mail address id and correspondent e-mail address. Every two fields are separated by a separation indicator (-)

As shown in Figure 11C, block (1205) shows a correspondent message history request. The request includes a customer id, customer e-mail address id and contact e-mail address. Also 2 counter fields are presented, count 1 is used to indicate the number of messages needed to be displayed in detailed format, count 2 is used to indicate the number of messages needed to be displayed in summery format. Every two fields are separated by a separation indicator (-).

As shown in Figure 11D, block (1207) shows a topic content request. The request includes a customer id, customer

e-mail address id and topic id . Also 2 counter fields are presented, count 1 is used to indicate the number of messages needs to be displayed in detailed format, count 2 is used to indicate the number of messages needed to be displayed in  
5 summery format. Every two fields are separated by a separation indicator (-).

### CONCLUSION

The invention operates by taking a novel approach to e-mail from the approach in use today. Current e-mail systems,  
10 including the user interfaces they provide, take a message-centric approach to e-mail - e-mail is sorted, stored, and shown in an exclusively message-centered way, with no attention to helping the user keep track of correspondent-  
15 centered information. The invention lets the user add and maintain correspondent-centered information to the e-mail system, and take advantage of the various user-interface and privacy benefits that this approach offers.

## WHAT IS CLAIMED IS:

1. A method of receiving and evaluating a message transmitted from a correspondent over a data transmission network to a message user, said message comprising a first  
5 portion comprising the message content and at least one further second portion, said method comprising the steps of:

a) evaluating the transmitted message to identify the second portion thereof;

b) isolating the identified second portion from the  
10 first portion;

c) storing a single instance of said first portion in a first memory and providing an identification of the record within the first memory where the first portion of the evaluated message is stored;

d) storing said record identification within a second  
15 memory; and

e) subsequently accessing and using said record identification as a link to said first portion as stored in first memory.

2. A method of receiving and evaluating the transmitted message as claimed in claim 1, wherein said second portion includes an address of the correspondent and there is further included the steps of:

f) storing the second portion including the correspondent address in the second memory; and

g) comparing the second portion of a subsequently received message with corresponded address stored  
25

in the second memory and, if there is a match, storing the second portion of that matching message in the second memory.

5           3. A method of receiving and evaluating the transmitted message as claimed in claim 2, where in step g) if there is no match, displaying an indication of the transmitted message to prompt the message user to accept or reject the transmitted message.

10           4. A method of evaluating and transmitting a message from a message user to a selected correspondent, said message comprising a first portion comprising the message content and at least one further second portion comprising  
15 the address of the correspondent for which the message is intended, said method comprising the steps of:

a) storing in a second memory the addresses of the correspondents to which

messages have been previously transmitted;

20           b) isolating the identified first portion from the second portion of the message to be transmitted;

c) evaluating the message to be transmitted to identify the second portion;

d) comparing the correspondent address of the message  
25 to be transmitted with the correspondent addresses stored in the second memory;

e) if there is a match of correspondent addresses in step d), storing a single instance of said first

portion in a first memory and providing an identification of the record within the first memory where the first portion of the evaluated message is stored;

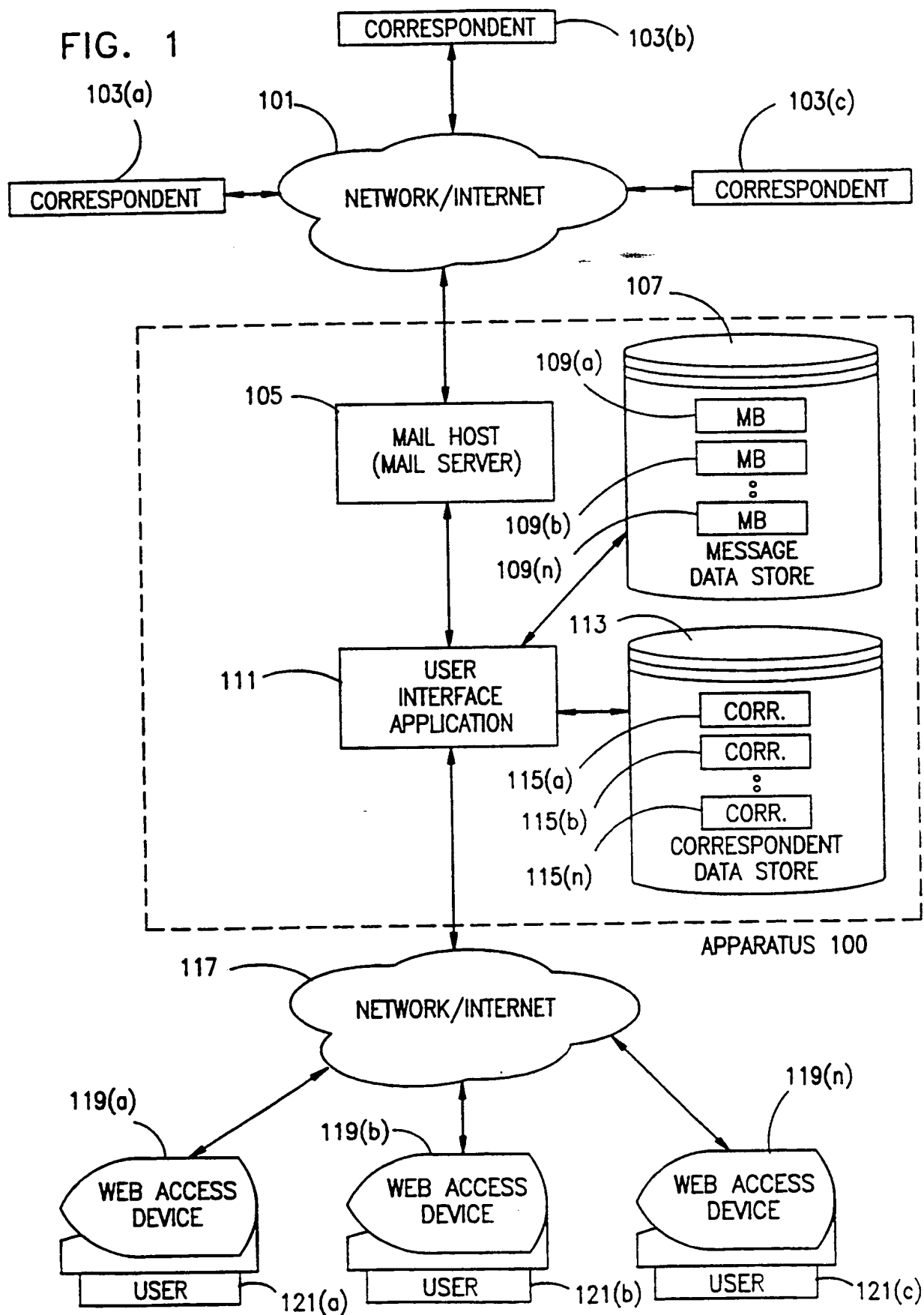
- 5        f) storing said record identification within a second memory; and
- g) after step f, transmitting the message to the selected correspondent.

10       5. A method of transmitting the message as claimed in claim 4, where in step d) if there is not match, displaying an indication of the correspondent address to prompt the message user to transmit or delete the message to be transmitted.

15

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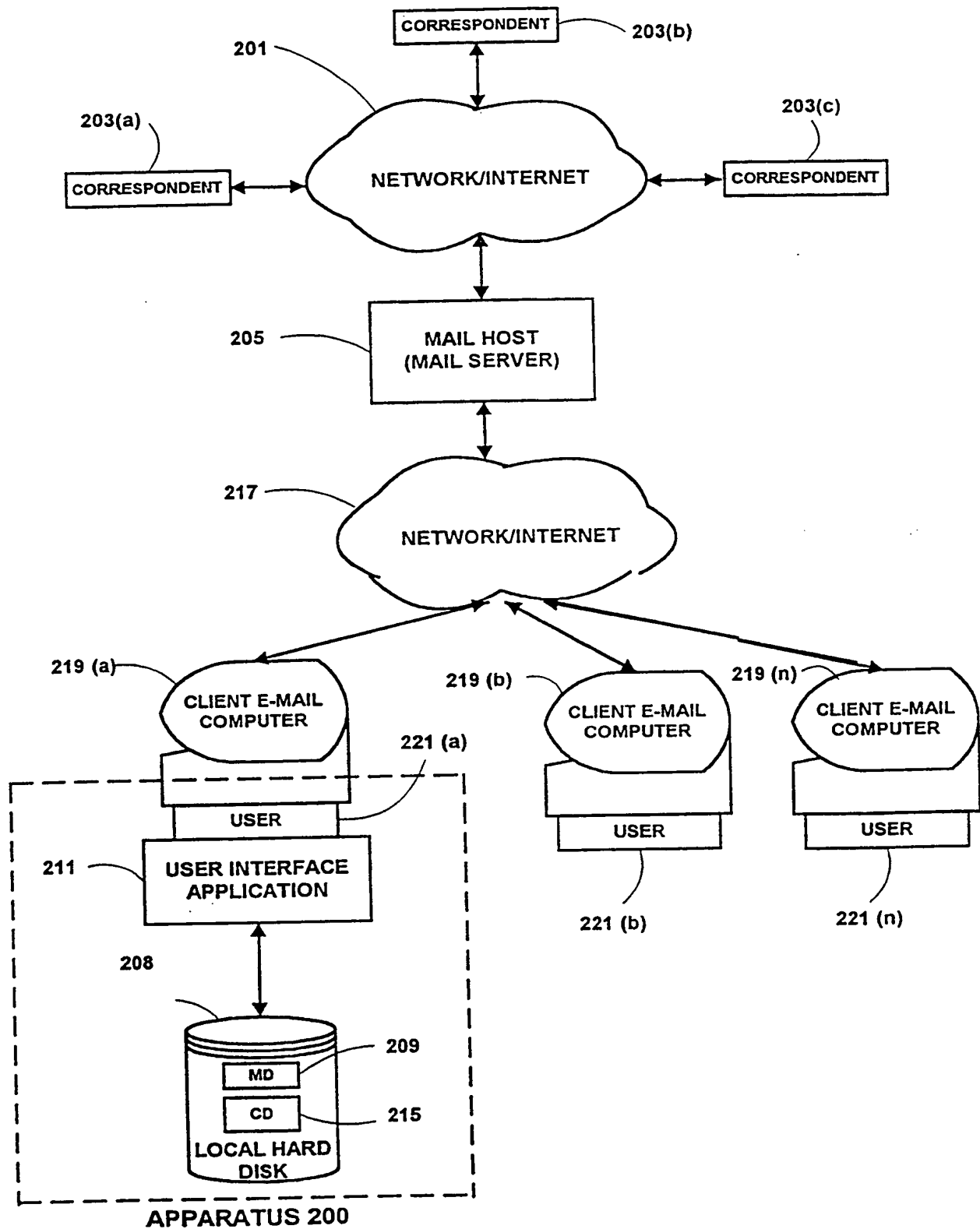
FIG. 1





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FIG. 2



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FIG. 3  
CORRESPONDENT TABLE (CORRESPONDENT DATA STORE)

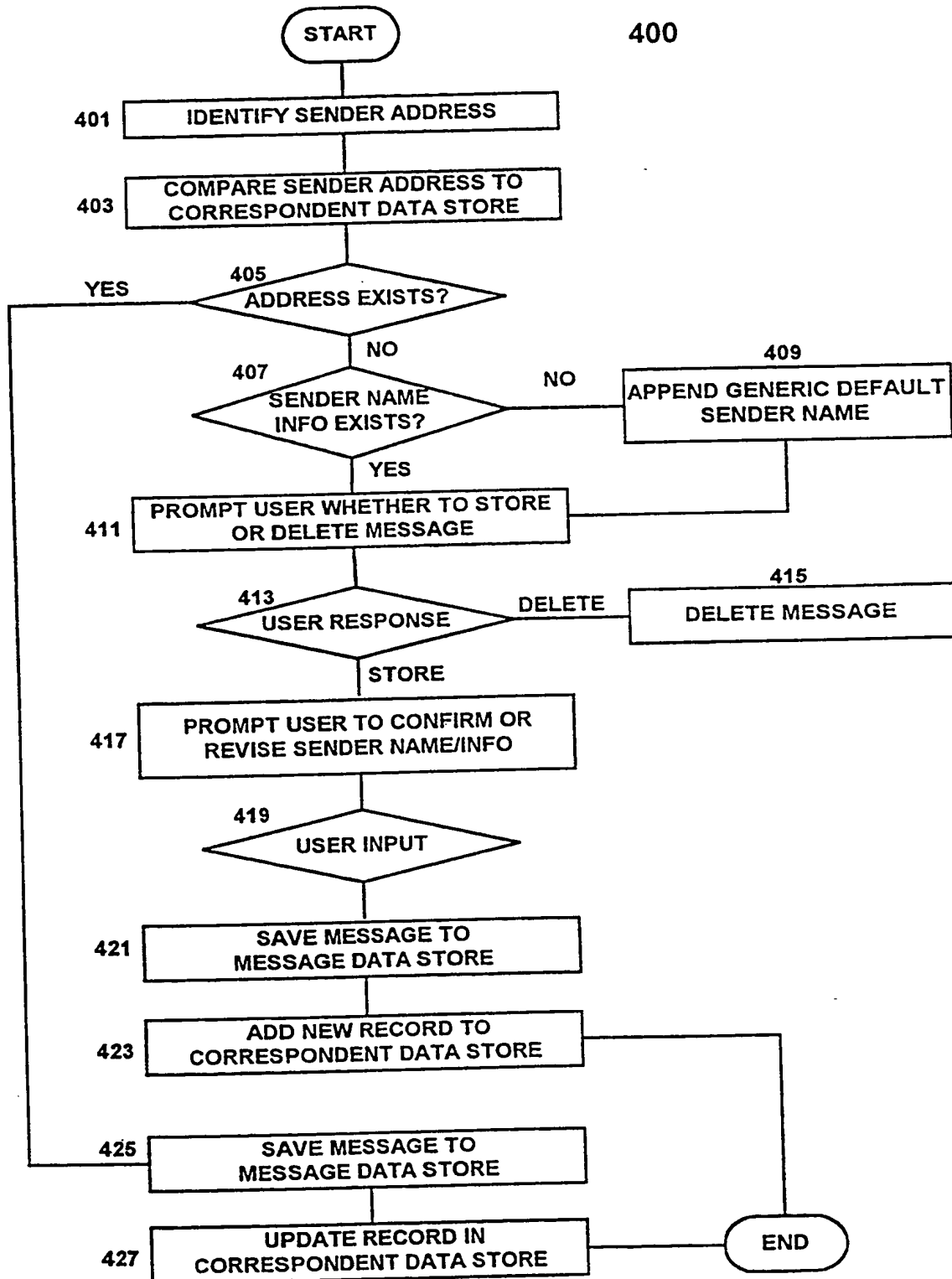
115 (n) or 215

CORRESPONDENT NAME	E-MAIL ADDRESS	LINKS TO MSGS. IN MSG. DATABASE	# OF MESSAGES IN DATABASE	LAST MESSAGE TYPE (IN OR OUT)	DATE OF LAST CORRESPONDENCE
CORRESPONDENT 1	ADDRESS FOR CORR. 1	MSG. ID'S FOR CORR. 1	# OF MSG.'S TO & FROM CORR. 1	LAST MSG. STATUS, CORR. 1	DATE FOR CORR. 1
CORRESPONDENT 2	ADDRESS FOR CORR. 2	MSG. ID'S FOR CORR. 2	# OF MSG.'S TO & FROM CORR. 2	LAST MSG. STATUS, CORR. 2	DATE FOR CORR. 2
...	...	...	...	...	...
CORRESPONDENT n	ADDRESS FOR CORR. n	MSG. ID'S FOR CORR. n	# OF MSG.'S TO & FROM CORR. n	LAST MSG. STATUS, CORR. n	DATE FOR CORR. n

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FIG. 4

## INCOMING MESSAGE PROCESSING



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**500**

<b>NXC.net</b>		<b>Your Personal NXC-Mail</b>		Steve Miller's Personal Intranet	
net exchange					

**501**



**503**

**Pending E-Mail**

	<u>From</u>	<u>Subject</u>	<u>Date</u>	<u>Time</u>	<u>Delete</u>
1.	Paul Smythe	Sheryl	12/28	9:35a	<input type="checkbox"/>
2.	Randall Simpson	ISDN Problem	12/28	1:05p	<input type="checkbox"/>
3.	*?ksmith223@aol.com	970-555-5555 [Note-unrecognized sender]	12/29	7:35p	<input type="checkbox"/>
4.	*?Rich Mellor (rmellor@msn.com)	- [Note-unrecognized sender]	12/29	11:29p	<input type="checkbox"/>
5.	Susan Nichols	Interesting investment	12/30	10:35a	<input type="checkbox"/>

**505**

**Delete Junk (Delete all above messages from unrecognized senders)**

	<b>Contact List and Past Correspondence (find your contacts and past correspondences)</b>
	<b>Change Your E-Mail Options (eliminate junk e-mail, change your default settings, set the time period your messages will be saved, etc.)</b>

**507**

**509**

**Back to Welcome Page**

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**FIG. 5**

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FIG. 6(a)

<b>NXC.net</b>	<b>Mail - Paul Smythe</b>	Steve Miller's Personal Intranet
net exchange		

To:	Steve Miller	4/7/97;9:35a.m.
CC's:	Melissa Smith, Jerry Sternfield	Later Save Delete
Subject:	Stock Recommendation (3)	<input checked="" type="radio"/> <input type="radio"/> <input type="radio"/>

Steve - Thanks for the advice about that investment. It gained four points since you recommended it. Please let me know any other recommendations you have.

When can you and Jeanne meet us for dinner? - Paul

To:	Paul Smythe
CC's:	Melissa Smith, Jerry Sternfield
Subject:	Stock Recommendation (4)
Response:	Dear Paul:

Send

### Past Correspondence with Paul Smythe

To:	You; Jeremy Johnson	Tuesday
CC's:	Melissa Smith, Jerry Sternfield	4/6/97-8:01a.
Subject:	Stock Recommendation (2)	Delete <input type="checkbox"/>

Check out XYZ stock. I've been following the industry, and I think there's some potential. I've bought several thousand shares for my own portfolio. - Jim

To:	Paul Smythe	Tuesday
CC's:	Melissa Smith, Jerry Sternfield	4/5/97-8:45p.
Subject:	Stock Recommendation	Delete <input type="checkbox"/>

Do you have any ideas about stock investments?

My wife just got some money to invest. I know you're an expert in technology stocks. Please let me know.

BTW, How's your son doing in school

Paul

### Earlier Correspondence

<u>Sender</u>	<u>Subject</u>	<u>Date</u>	<u>Time</u>	<u>Delete</u>
Paul Smythe	Hi!(2)	12/19	10:45	<input type="checkbox"/>

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FIG. 6(b)

<u>You</u>	Hi!	12/15	12:05p	<input type="checkbox"/>
<u>You</u>	I Moved	12/13	10:05p	<input type="checkbox"/>
<u>Paul Smythe</u>	(no subject)	12/10	11:01p	<input type="checkbox"/>
<u>You</u>	Vacation	12/08	1:25p	<input type="checkbox"/>

Back to Your Personal E-Mail or Welcome Page

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<b>NXC.net</b> net exchange	<b>Contacts and Correspondence</b>	Steve Miller's Personal Intranet
--------------------------------	------------------------------------	-------------------------------------

Your Contact List - Click to Read/Send 703

701

Search For:  Search

Last, First	Nickname	E-mail Address	Last Msg.	In/ out	Past Msgs.	Send to:	cc to:	bcc to:	Delete
Austin, Allison	Ally	Allison@nyc.ny.nxc.com	12/26	In	0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grange, Elizabeth	Beth	Beth@nyc.ny.nxc.com	11/27	In	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Johnson, Dr. Kim	Kim	Kim@slc.ut.nxc.com	12/28	Out	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Johnson, William S.	Bill	BJohnson@nyc.ny.nxc.com	12/18	In	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitchell, Ramona	Ramona	RamonaM@ix.netcom.com	12/29	Out	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nichols, Susan	Sue	snichols195@aol.com	12/28	Out	7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Samuels, Jacqueline	Jackie	jsamuels@harvard.edu	12/28	In	2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smith, John R.	Jack	Smitty.ny.nyc.nxc.com	12/15	Out	3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smythe, Paul	Paul	Paul@ny.nyc.nxc.com	12/29	Out	11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Williams, Ellen	Ellie	EllenW@panix.com	12/05	In	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Edit Contact Information, Add New Contacts, or Change Your E-mail

Options

Confirm Erase Choices

705 707 709 711

Back to Personal E-Mail Summary or Welcome Page

FIG. 7

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<b>NXC.net</b>	<b>Eliminate Junk-Mail</b>	Steve Miller's Personal Intranet
net exchange		

This page lets you completely eliminate junk mail, by changing your e-mail address so that those who don't know your new address can no longer send you e-mail. However, since we keep track of all your e-mail contacts, we let you conveniently choose which contacts will have your new e-mail address.

For your continuing contacts who use NXC-mail provider, this change will be transparent - we make the adjustment to our database, and your contact needs take no action, and merely sends you e-mail as before.

For your contacts who don't use NXC-mail, we will send them a polite e-mail message from you (which you can review and edit), notifying them of your e-mail address change so they can update their e-mail software.

Instructions: After you press the "submit" button below, only the e-mail contacts checked below will have your new e-mail address. Click on a checkbox to uncheck any names whom you don't want to have your new NXC-mail address. To decide whether to uncheck a contact, you can click on the contact name to review your correspondence history with that contact. After you complete your choices, click on the "submit" button below.

<u>Last Name</u>	<u>1st Name</u>	<u>E-mail Address</u>	<u>Last Msg.</u>	<u>In/Out</u>	<u>NXC Mail?</u>	<u>Inform ?</u>
Austin	Allison	Allison.nyc.ny	12/26	In	Yes	<input checked="" type="checkbox"/>
Dougherty	Jim	jim4092@aol.com	12/23	Out	No	<input checked="" type="checkbox"/>
Grange	Beth	Beth.nyc.ny	11/27	In	Yes	<input checked="" type="checkbox"/>
Hardy	Dave	DH.nyc.ny	11/3	In	Yes	<input checked="" type="checkbox"/>
Johnson	Kim	Kim.slc.ut	12/28	Out	Yes	<input checked="" type="checkbox"/>
Johnson	William S.	BJohnson.nyc.ny	12/18	In	Yes	<input checked="" type="checkbox"/>
Mitchell	Ramona	RamonaM@ix.netcom.com	12/29	Out	No	<input checked="" type="checkbox"/>
Nichols	Sue	snichols195@aol.com	12/28	Out	No	<input checked="" type="checkbox"/>
Samuels	Jackie	jsamuels@harvard.edu	12/28	In	No	<input checked="" type="checkbox"/>
Smith	John R.	Smitty.ny.nyc	12/15	Out	Yes	<input checked="" type="checkbox"/>
Smythe	Paul	Paul.ny.nyc	12/29	Out	Yes	<input checked="" type="checkbox"/>
Stempler	Randall	randall@stempler.com	12/27	In	No	<input checked="" type="checkbox"/>
Williams	Ellen	EllenW@panix.com	12/05	In	No	<input checked="" type="checkbox"/>

Submit Erase Choices

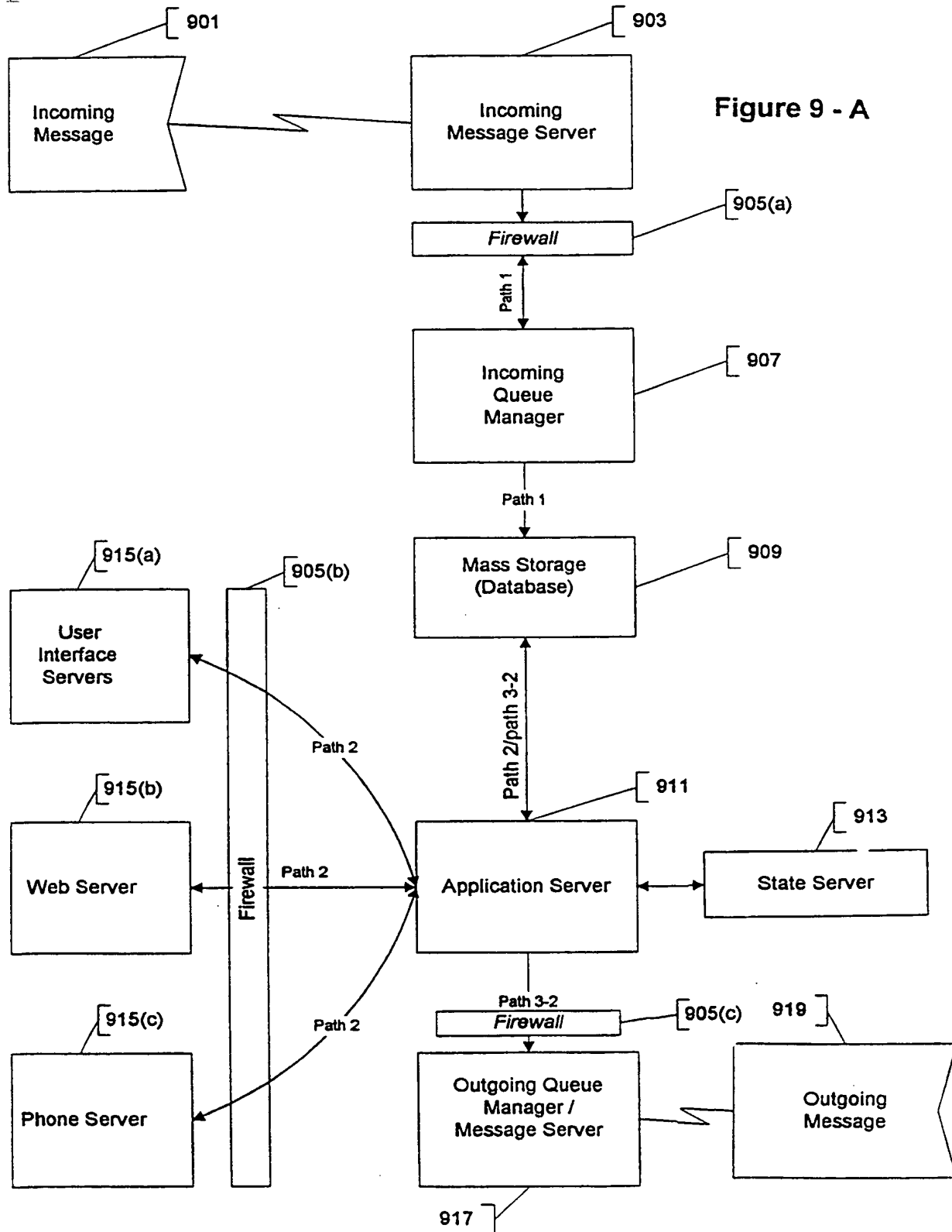
Back to Change Your Personal NXC-Mail Options, or Summary

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FIG. 8

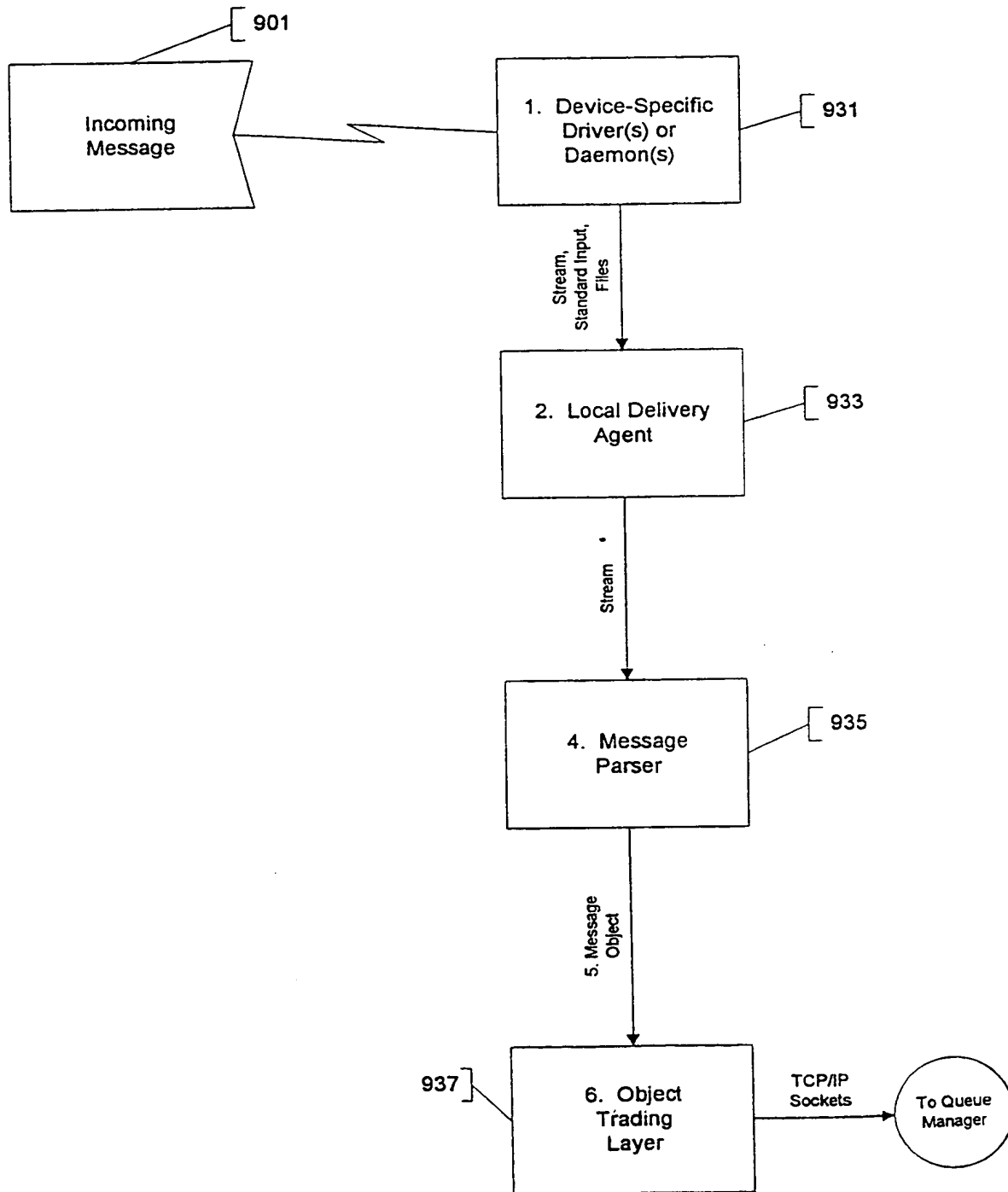


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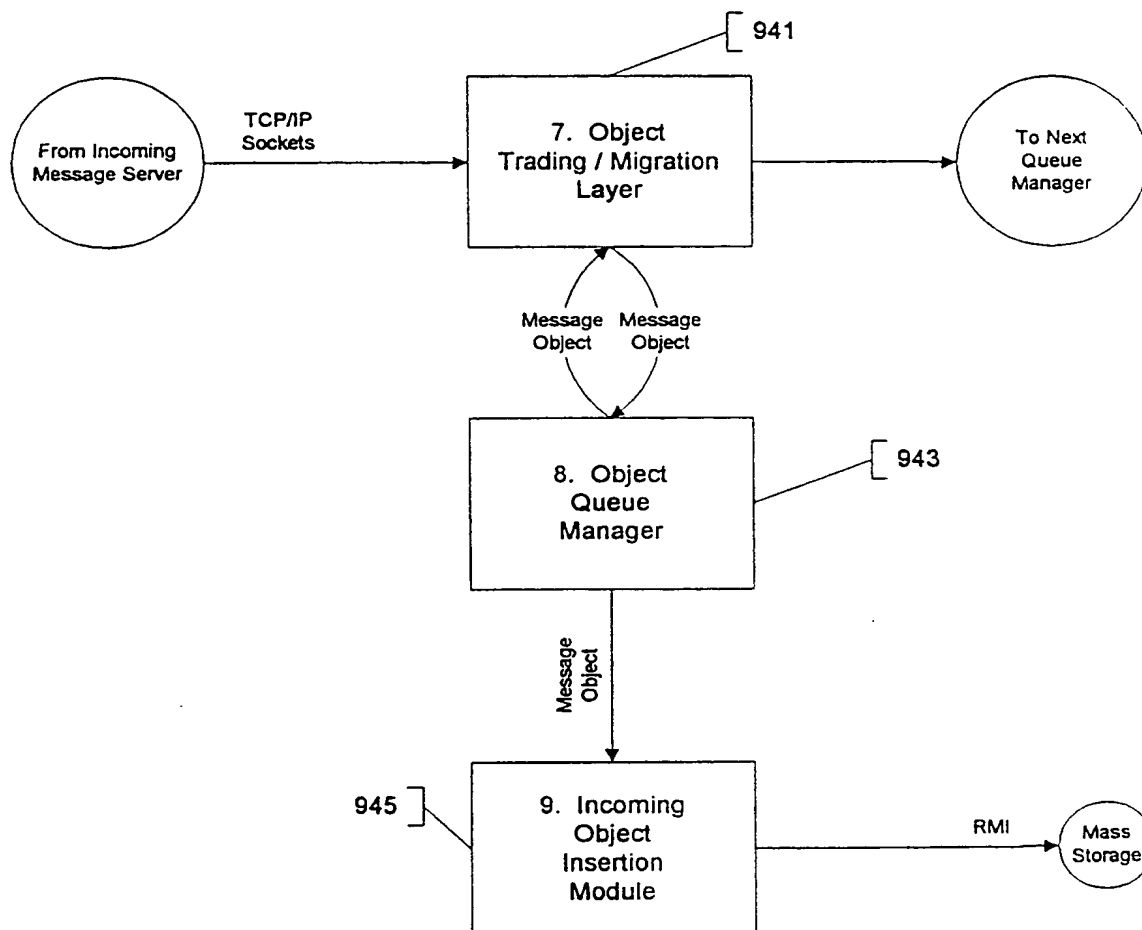
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Figure 9 - B



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Figure 9 - C



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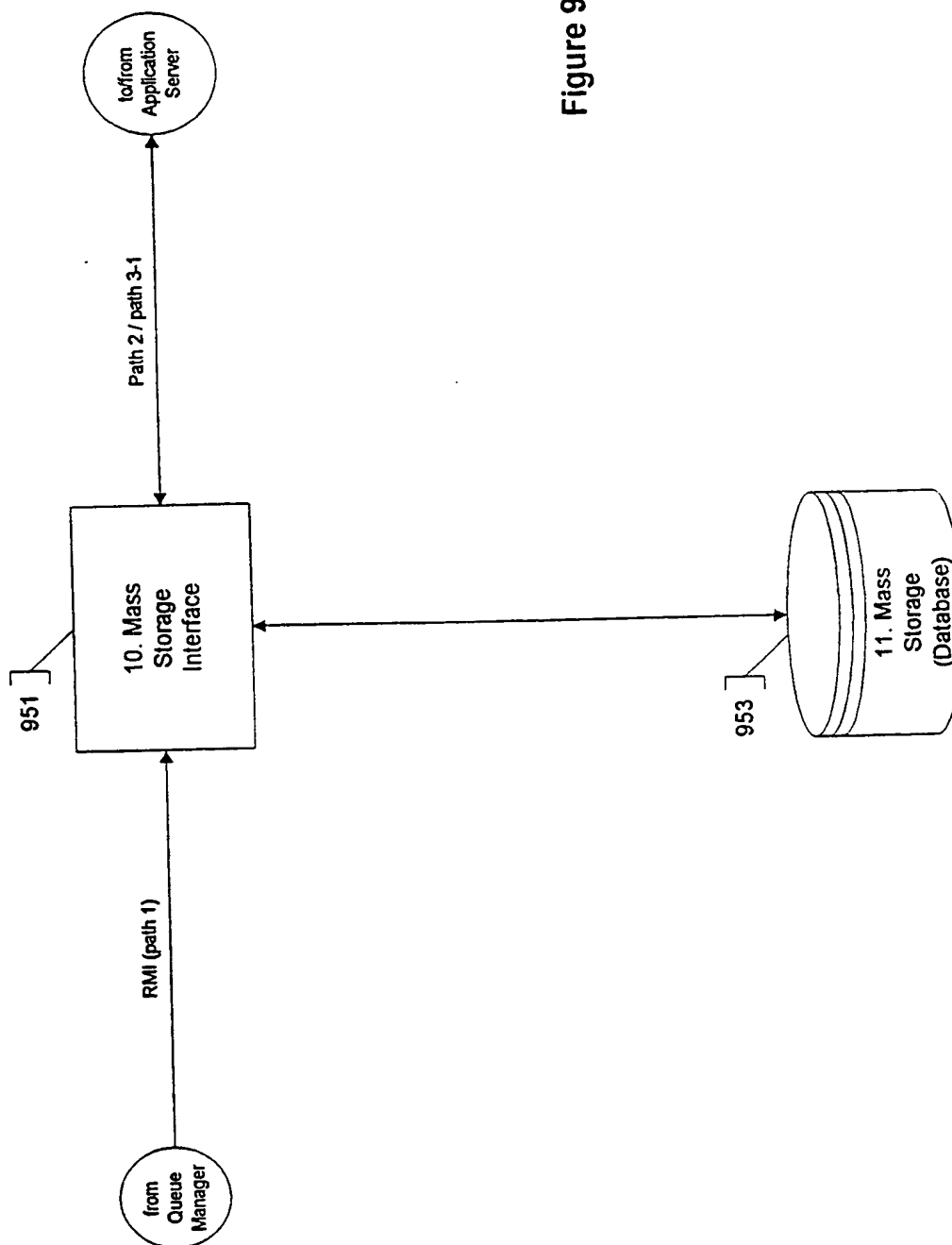
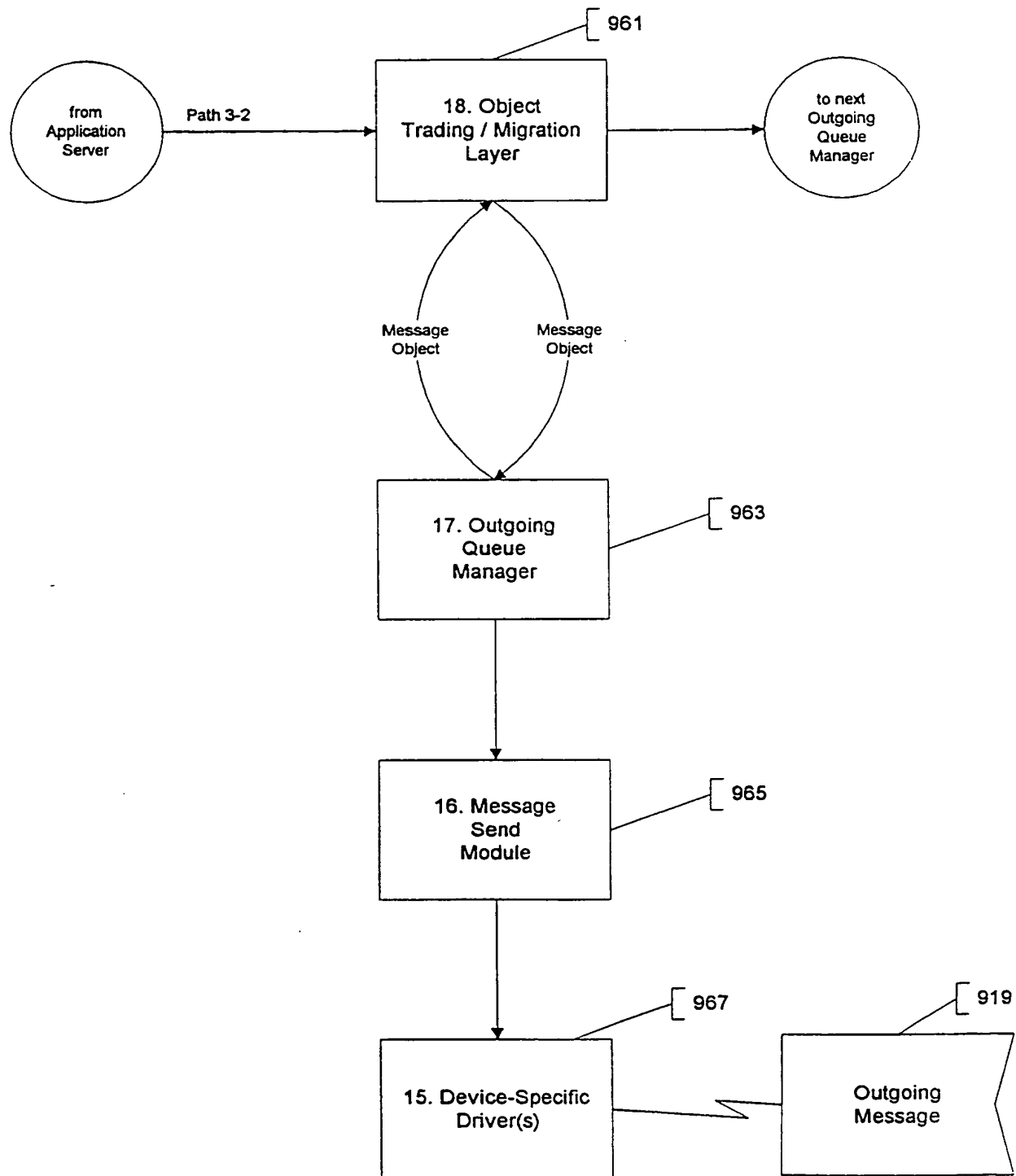


Figure 9 - D

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Figure 9 - E



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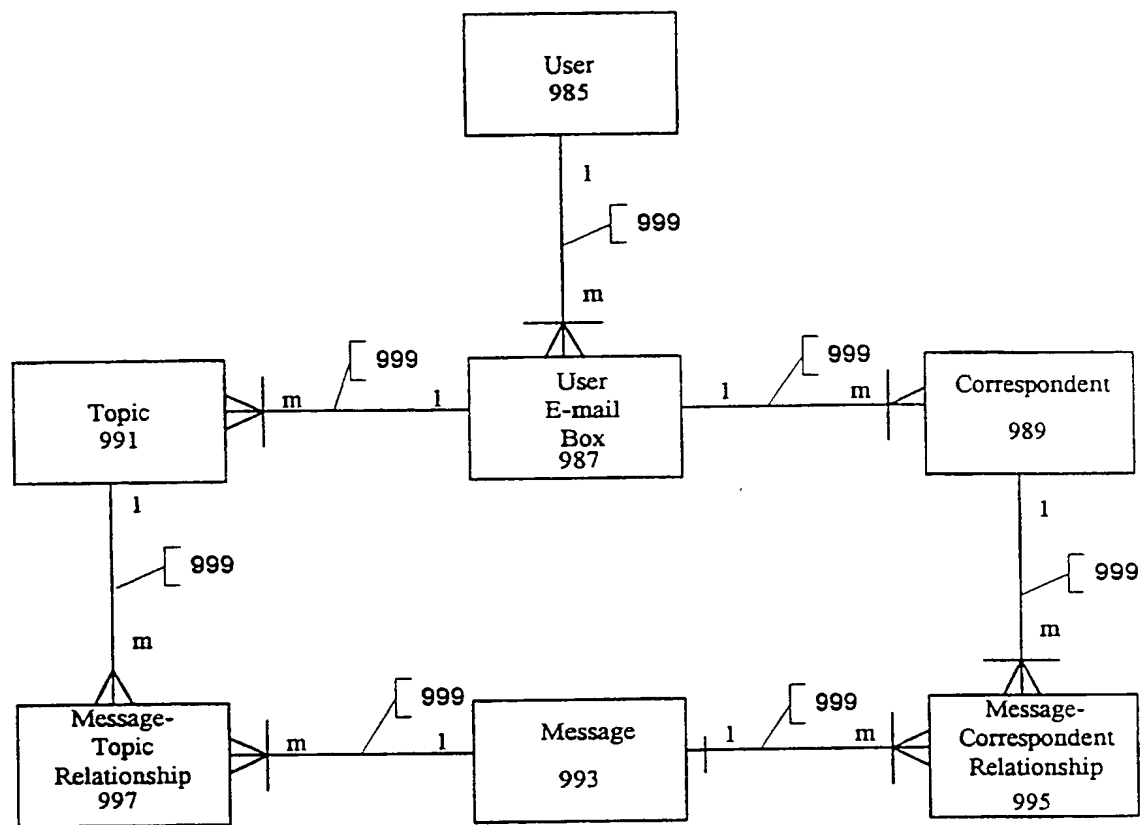


Figure 9 - F

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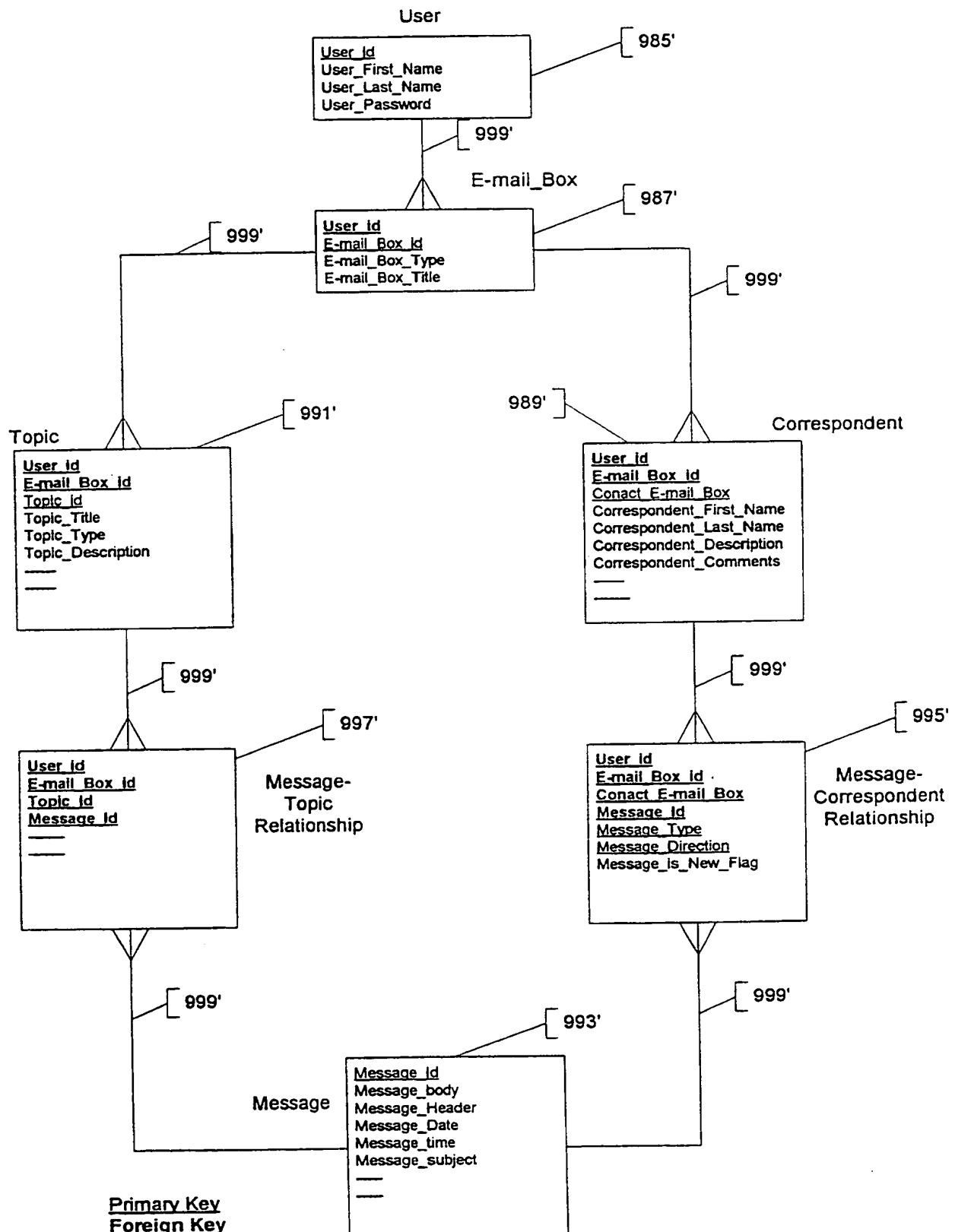
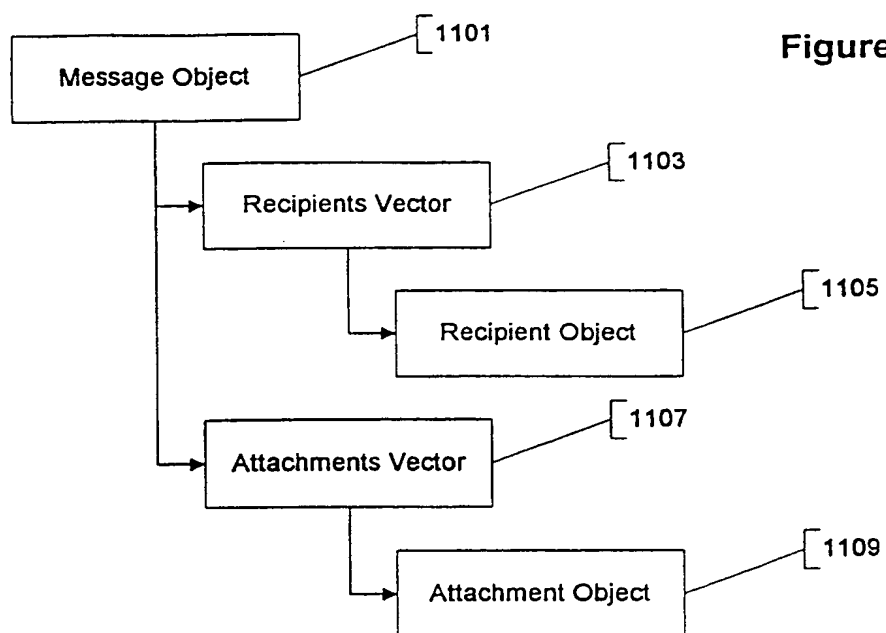


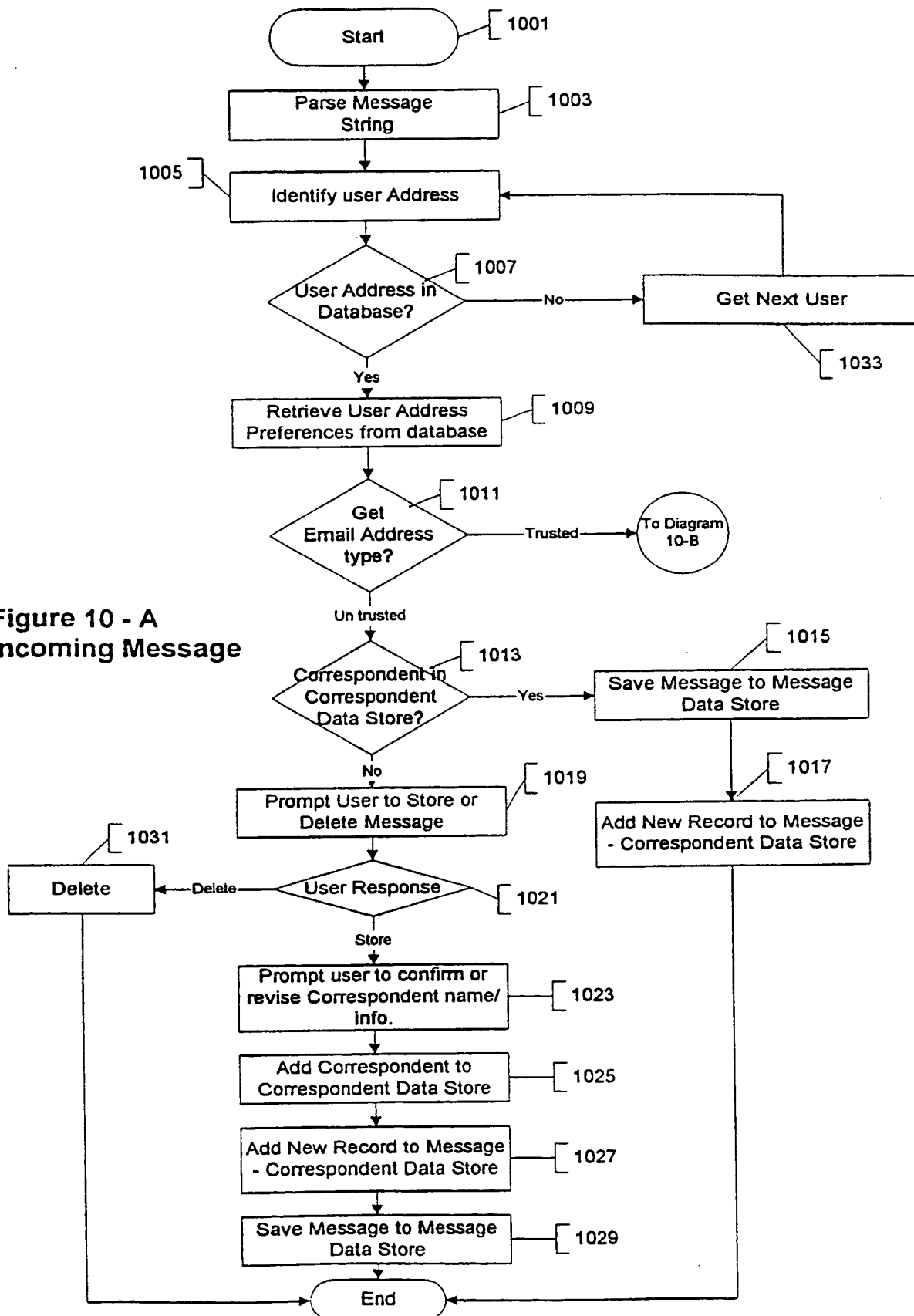
Figure 9 - G

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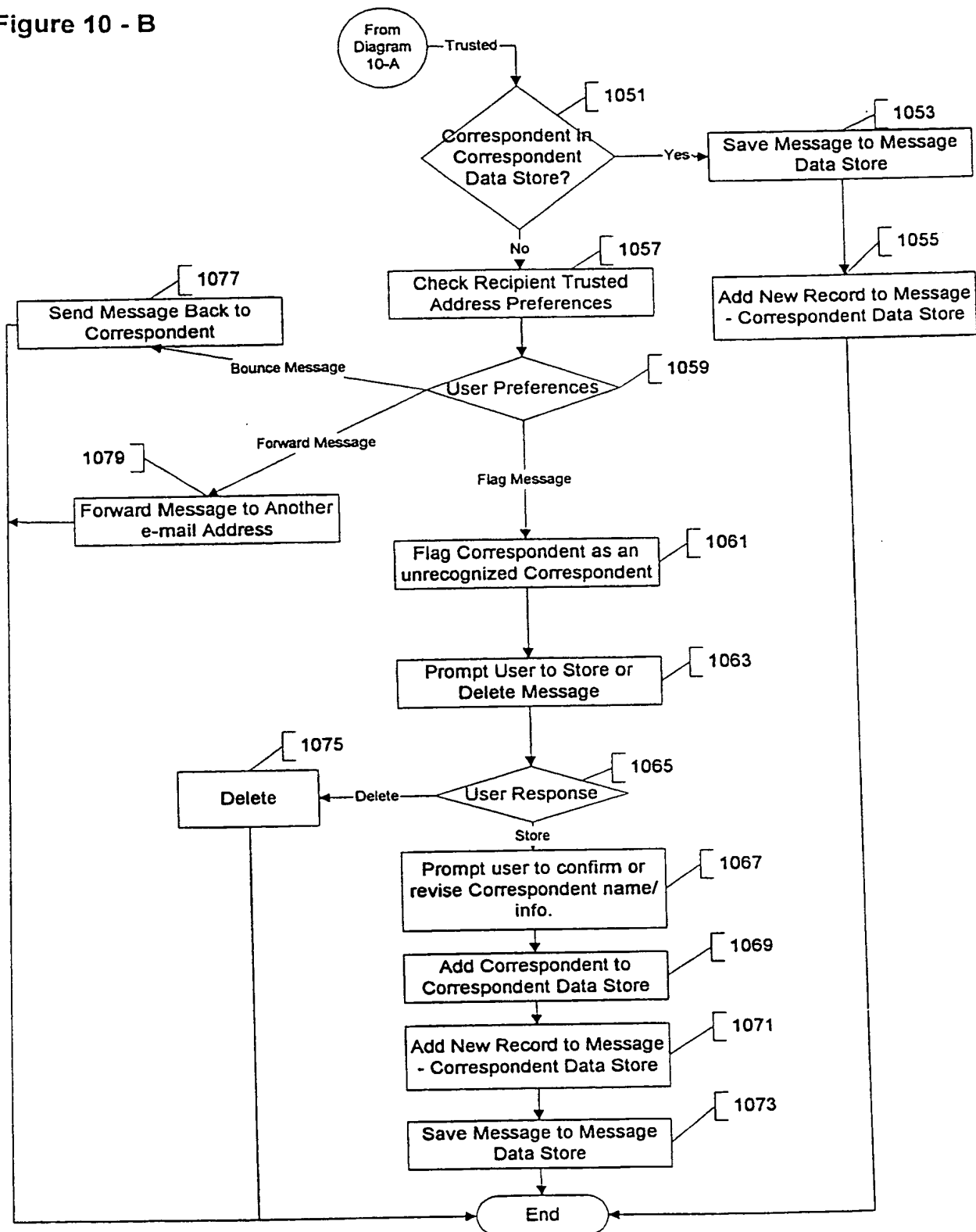


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Figure 10 - B



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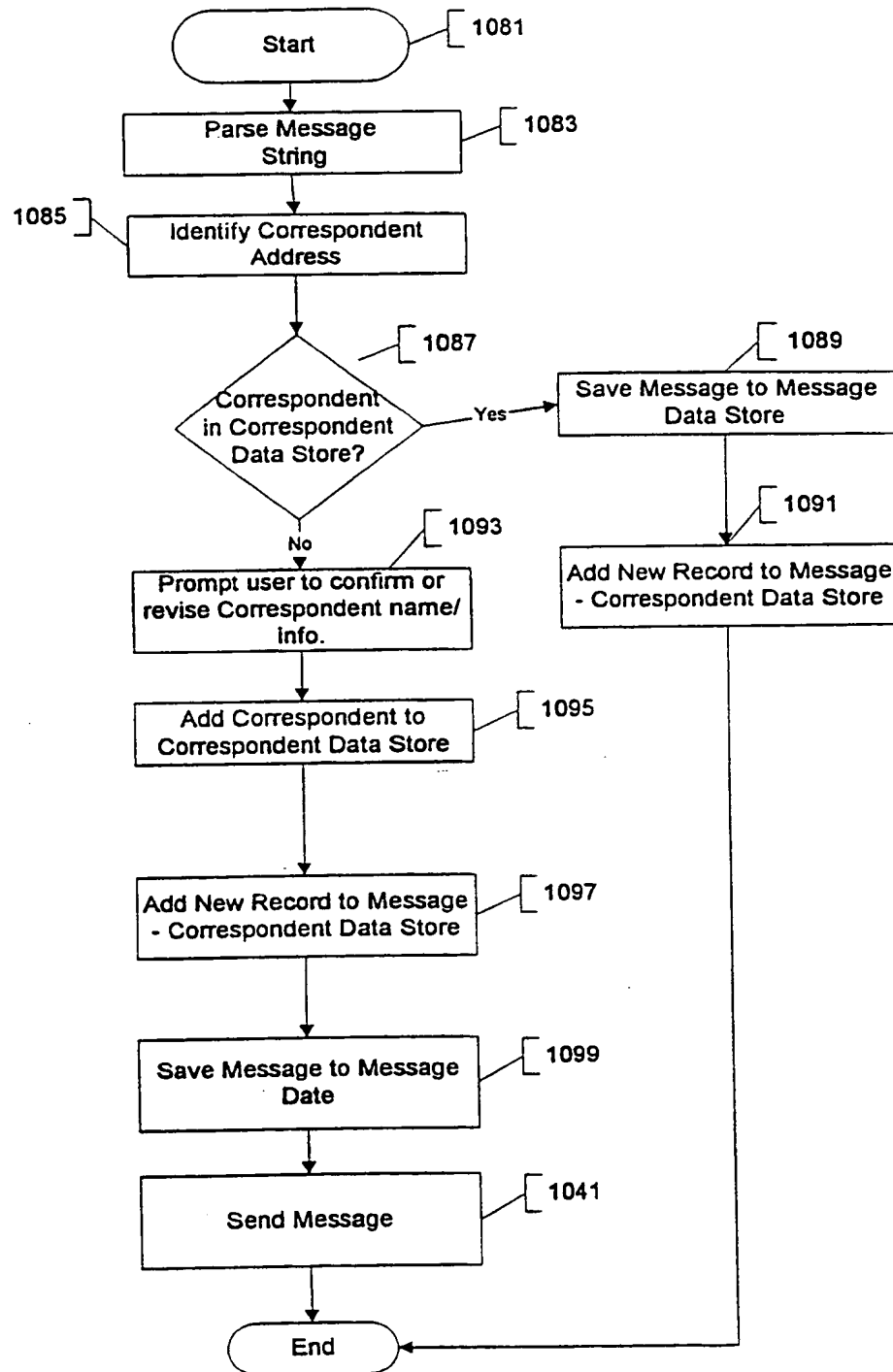


Figure 10 - C  
Outgoing Message

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**Figure 11 A**

Message Request

Customer ID	-	Customer E- mail Address ID	-	Correspondent E- mail Address	-	Message ID
-------------	---	-----------------------------	---	-------------------------------	---	------------

**Figure 11 B**

Correspondent Information Request

Customer ID	-	Customer E- mail Address ID	-	Correspondent E- mail Address
-------------	---	-----------------------------	---	-------------------------------

**Figure 11 C**

Correspondent History Request

Customer ID	-	Customer E- mail Address ID	-	Correspondent E- mail Address	-	Count1	-	Count2
-------------	---	-----------------------------	---	-------------------------------	---	--------	---	--------

**Figure 11 D**

Topic Contents Request

Customer ID	-	Customer E- mail Address ID	-	Topic ID	-	Count1	-	Count2
-------------	---	-----------------------------	---	----------	---	--------	---	--------

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Figure 12

Mail Summary			Joe Smith
<i>Joe Smith's E-mail Addresses</i>	<i>Pending Mail</i>	<i>Correspondence Log</i>	
Trusted MailBox (JoeSmith@nxc.com)	7 ln, 3 new, 2 drafts	2,082 msgs, 113 contacts	
Untrusted MailBox (JS@nxc.com)	4 ln, 0 new, 1 draft	195 msgs, 54 msgs.	
Suggestions (suggestions@domain.com)	34 ln, 1 new, 1 draft	235 msgs, 44 msgs.	
Tech. Support (support@domain.com)	4 ln, 1 new, 1 draft	135 msgs, 24 msgs.	

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US98/14886

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : G06F 13/00

US CL : 395/200.36, 673

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 395/200.36, 673

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
APS

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 5,548,789 A (NAKANURA) 20 AUGUST 1996, COL. 4, LINES 9-22, COL. 7, LINE 42 - COL. 8, LINE 5.	1 -- 2-5
Y	US 5,377,354 A (SCANNELL ET AL) 27 DECEMBER 1994, COL. 3, LINE 33 - COL 4, LINE 38, COL. 5, LINE 15 - COL. 7, LINE 27.	2-5

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
*A* document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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*O* document referring to an oral disclosure, use, exhibition or other means	
*P* document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

07 OCTOBER 1998

Date of mailing of the international search report

10 NOV 1998

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Washington, D.C. 20231

Facsimile No. (703) 305-3230

Authorized officer

LE HIEN LUU

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*Replaced by Article 34*  
WHAT IS CLAIMED IS:

1. A method of receiving and evaluating a message transmitted from a correspondent over a data transmission network to a message user, said message comprising a first portion comprising the message content and at least one further second portion, said method comprising the steps of:
- a) evaluating the transmitted message to identify the second portion thereof;
  - b) isolating the identified second portion from the first portion;
  - c) storing a single instance of said first portion in a first memory and providing an identification of the record within the first memory where the first portion of the evaluated message is stored;
  - d) storing said record identification within a second memory; and
  - e) subsequently accessing and using said record identification as a link to said first portion as stored in first memory.

20

2. A method of receiving and evaluating the transmitted message as claimed in claim 1, wherein said second portion includes an address of the correspondent and there is further included the steps of:

- 25 f) storing the second portion including the correspondent address in the second memory; and
- g) comparing the second portion of a subsequently received message with corresponded address stored

in the second memory and, if there is a match,  
storing the second portion of that matching message  
in the second memory.

5           3. A method of receiving and evaluating the  
transmitted message as claimed in claim 2, where in step g)  
if there is no match, displaying an indication of the  
transmitted message to prompt the message user to accept or  
reject the transmitted message.

10

          4. A method of evaluating and transmitting a message  
from a message user to a selected correspondent, said  
message comprising a first portion comprising the message  
content and at least one further second portion comprising  
15 the address of the correspondent for which the message is  
intended, said method comprising the steps of:

- a) storing in a second memory the addresses of the  
correspondents to which  
messages have been previously transmitted;
- 20 b) isolating the identified first portion from the  
second portion of the message to be transmitted;
- c) evaluating the message to be transmitted to  
identify the second portion;
- d) comparing the correspondent address of the message  
25 to be transmitted with the correspondent addresses  
stored in the second memory;
- e) if there is a match of correspondent addresses in  
step d), storing a single instance of said first



portion in a first memory and providing an identification of the record within the first memory where the first portion of the evaluated message is stored;

- 5           f) storing said record identification within a second memory; and
- g) after step f, transmitting the message to the selected correspondent.

10           5. A method of transmitting the message as claimed in claim 4, where in step d) if there is not match, displaying an indication of the correspondent address to prompt the message user to transmit or delete the message to be transmitted.

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